SCIENTIFIC AMERICAN

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME I.] NEW-YORK, THURSDAY, MARCH 26, 1846. [NUMBER 28.]

THE SCIENTIFIC AMERICAN

PUBLISHED EVERY THURSDAY MORNING, AT THE SUN BUILDINGS,

—Entrance 128 Fulton st., and 89 Nassau st.—

ALSO, AT NO. 13 COURT ST., BOSTON, AND NO. 29 ARCADE, PHILADELPHIA.

(The Principal Office being at New York,)

By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting o notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Expements;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

TERMS.—"The Scientific American" will be furnished to subscribers at $2, per annum,—one dollar in advance, and the balance in six months.

Five copies wil lbe sent to one address six months, for four dollars in advance.

Any person procuring four or more subscribers, will be entitled to a commission of twenty-five cents each.

TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

The Windy Night.

Alow and aloof, over the roof,
How the midnight tempests howl!
With a dreary voice, like the dismal tune
Of wolves that bay at the desert moon:—
Or whistle and shriek through limbs that creak,
"Tu—whoo! tu—whit!" they cry and flit,
"Tu—whit!—tu—whoo!" like the solemn owl!

Alow and aloof, over the roof,
Sweep the moaning winds amain,
And wildly dash the elm and ash,
Clattering on the window sash!
With a clatter and patter, like hail and rain,
That well-nigh shatter the dusky pane!

Alow and aloof, over the roof,
How the tempests swell and roar!
Though no foot is a-stir,
Though the cat and the cur
Lie dozing the kitchen fire before!
There are feet of air on every stair!
Through every hall—
Through each gusty door,
There's a jostle and bustle, with a silken rustle,
Like the meeting of guests at a festival!

Alow and aloof, over the roof,
How the stormy tempests swell!
And make the vane on the spire complain—
They heave at the steeple with might and main;
And burst and sweep
Into the belfry, on the bell!
They smite it so hard and they smite it so well
That the sexton tosses his arms in sleep,
And dreams he is ringing a funeral knell!

An Affair of Honor.

Clumpy and Clod, two surly clowns,
As reeling home one night,
From ale-house where their sappy crowns
They soak'd in sad'ning plight,—

While all the azure-tinted sky
Spread out its clear expanse,
And all the glittering train on high
Seemed o'er their heads to dance.

Quoth Clump to Clod, "I tell thee what,
I only wish that I
As much good pasture land had got
As I can see blue sky—

"And I," said Clod to Clump, should like
Thy wish to beat by far,
And have, to prove a wealthier tyke,
An ox for every star."

"Ah but," says Clump, "to feed them all
What pasture could be found?"
"Enough," says Clod: "for great and small
I'd feed them on thy ground."

"What! and without my leave?" says Clump;
"Aye, that I would," says Cloddy.
Quoth Clump, "then thee my hide shall thump,
Or I will bump thy body."

So to't they went, both Clump and Clod,
As fast as fist could tag,
Till both lay sprawling on the sod,
And scarce a fist could wag.

"Now where's your oxen, Clod?" says Clump,
"And where," says Clod, "your ground?"
Both sighed and carcassraised on rump,
In vain for both looked round.

Then shaking hands, they cursed all jars,
And all deceiving eyes,
That looked for oxen in the stars,
And pasture from the skies.

EPIGRAM.

'Tis said that Truth is doom'd to dwell
Down at the bottom of a well;
(How cruel thus to duck it!)
'Mongst us so seldom it appears,
That I begin to have my fears
Truth must have kick'd the bucket.

A boy having been bound as an apprentice to an axe maker, in an eastern town, was employed during the first six years of his apprenticeship, at *turning grind stone.*

IMPROVED GALVANIC BATTERY.

Fig. 1.

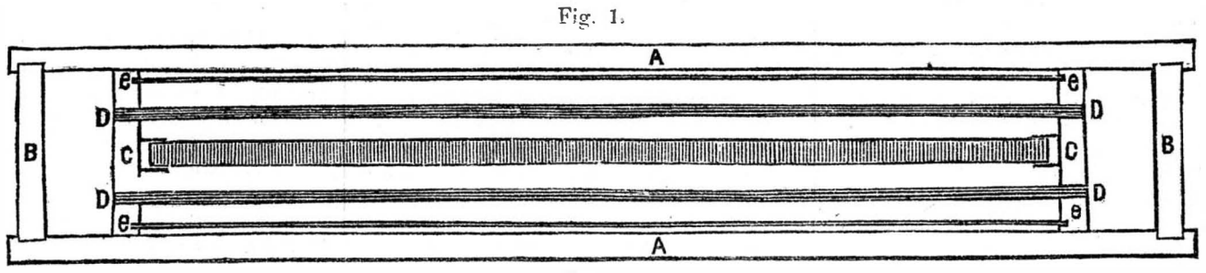
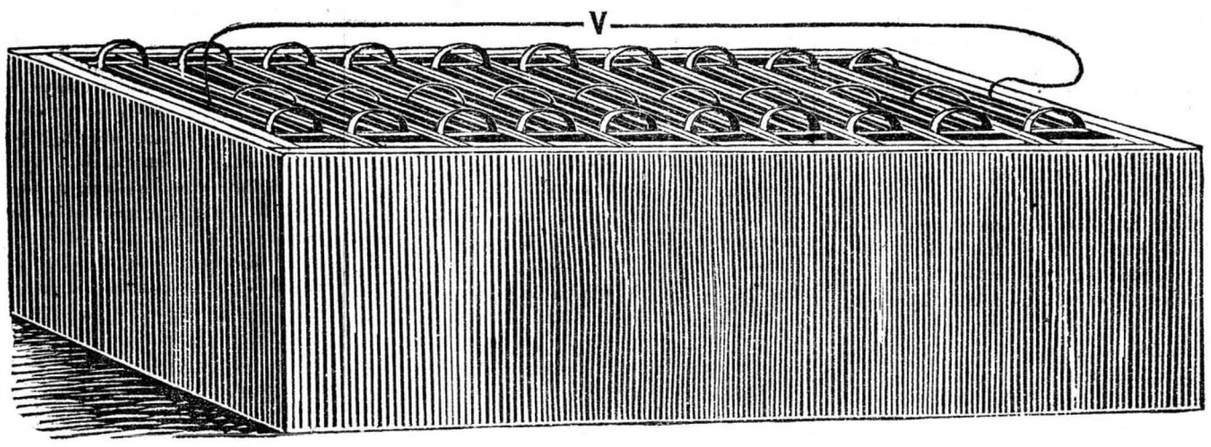


Fig. 2.



INTRODUCTION.—We have had occasion to use, at different times, seven different kinds of batteries, including nearly all the varieties known or used; and although *Grove's Battery*, in which platina plates and the nitric acid are used, is preferable for the magnetic telegraph, or for producing heat, yet for common business, such as electro-moulding and electro-plating, or for horticultural purposes, we give a decided preference to the plain copper and zinc plate batteries, in cells made of wood. Our reasons for preferring wood to glass or stone, are, that it is more light and portable, and less liable to be broken or injured. Moreover, it would be difficult, if not impossible, to procure cells of glass or stone so conveniently constructed as those represented in this engraving; and these can, moreover, be afforded for half the cost of other kinds of equal power and capacity.

EXPLANATION.—Fig. 1 represents a vertical view of a cell about half of the full size, which is twelve inches long, two inches wide and five inches deep. The boards, A B, of which it is made, are a quarter of an inch thick, and saturated with melted wax. It is fastened with copper tacks or brads; a coat of soft varnish being laid on the parts of wood which come in contact prior to being fastened. About half an inch from each end is a cross-partition; and two partitions, D D, made of leather—the common tanned horse-hide is as good as any,—extends from one cross-partition to the other. Each cross-partition, C e, consists of three pieces, and the ends of the leather partitions, having been reduced to a uniform thickness, are fastened between the different pieces which constitute the cross-partitions, by brads, which are driven through the whole. The centre apartment, formed by the leather and cross-partitions, has an independent bottom, to the edges of which the leather is fastened, thus constituting a cell by itself, which, not being fastened into the main cell, may be occasionally taken out of the other. The interior cell, contains a plate of zinc, C C, in its centre, and which rests on the bottom, and is kept in place by two or more pins at each end, projecting inward. Near the sides of the main cell are two plates of copper, e e, which are kept in place by small vertical grooves; and these two plates are connected to each other by a wire or strip of copper plate at each end, as shown in Fig. 2. The sections of the cross-partition, outside of the leather, are perforated full of holes, to allow a free circulation through them, and the small apartments at the ends, are to be kept full of sulphate of copper (blue vitriol.) The interior cell is kept full of a solution of sulphate of soda, diluted with two parts water to one of the saturated solution; and the spaces containing the copper plates are filled with a saturated solution of sulphate of copper. This arrangement constitutes a complete battery of itself, and is all that is required for ordinary horticultural or magnetic experiments; but for plating operations, a series of six or more of these batteries are arranged in a large box or trunk, as shown in Fig. 2. If a large quantity of electricity is required, as in electro-moulding, all the zinc plates are connected to each other, thus virtually constituting one large plate: and all the copper plates are also similarly connected. But when intensity is required, as in plating, or working a telegraph, one of the copper plates of the first cell is connected to the zinc of the second; the copper of the second to the zinc of the third, &c., as seen in fig. 2, and the copper of the last cell of the series, is connected by a circuitous wire, metallic solutions, or other conductors, to the zinc of the first pair or cell. The circuit wires in the engraving, are not connected, but both terminate near V. The most convenient mode of connecting the plates, is by means of two parallel narrow strips of copper-plate, rivetted together in the centre and bent in the form of a bow, and so adjusted that one end of each piece may pass down on either side of the edge of the plate to which it is attached; the ends of the strips and the edges of the plates being filed bright so as to produce a perfect contact. This battery will work three days in succession without replenishing.

MANUFACTURE OF GLASS IN THE UNITED STATES.—From actual returns made to Messrs. M. and J. Sweeney, Glass Manufactures at Wheeling, and communicated by them in a Letter to Hon. Andrew Stewart, Member of Congress from Virginia, we gather some very important facts respecting the Manufacture of Glass in the United States, and the effects upon that important branch of Industry of the Tariff of 1842.

The whole number of Manufactories of Flint Glass in the country is 19. The materials consumed in these establishments are stated as follows: 1,200,000 bush. American Coal; 50,000 bushels of Foreign coal; 5,500 tons of Anthracite coal; 8,666 cords of wood; 2,800 bbls. of Rosin, 3,555 tons of silex or fine sand; 956 tons of fire clay; 970 tons of iron; 20,400 lbs. of borax; 3,616,000 lbs. of Missouri lead; 2,875,000 lbs. of pearl ash; 272,000; lbs of saltpetre; 1,700; tons of straw; 445,000 staves; 270,000 hoops; 1,400,000 boards; 6,500 lbs. of manganese; 22,500 lbs. of arsenic; $200,000 worth brass, britannia, and tin ware. The cost of these articles to the manufacturers is not less than $800,000. To procure them requires the employment of a very large number of men, who consume and pay for a vast quantity of agricultural produce, thus directly benefitting that portion of our population devoted to farming. The coal is chiefly obtained in Pennsylvania, the other articles principally from Virginia and the West. The shipping required to convey these materials to the various manufactories is estimated to equal the constant employment of 5,393 tons. To this must be added nearly as much more for conveying the manufactured articles to the point of consumption—making in all 10,000 tons of coastwise, lake, river, and canal tonnage employed in this comparatively small branch of Home Industry.—*Tribune.*

TRIPLE DEFENCE.—A case was tried a few days since in Baltimore for the recovery of an account set forth on the face of a note, given for a supper, champagne, &c. when the defence, most ingeniously presented, took a three cornered form. In the first place it was contended that the defendant did not sign the note; in the second place that he wus drunk when he signed it; and in the third place that he never had the supper.—The magistrate however, in spite of the three-cornered defence, gave judgment for the plaintiff.

IRON TRADE.—We learn, both from our private correspondence, and from the London Mining and other Journals, that the iron trade is in an exceedingly flourishing condition. It is stated that there is not a single iron works of any description in South Staffordshire which is not in operation, or, if not fully employed, it is for lack of raw materials rather than of orders. The demand for ships, buildings, railways, and other purposes, has increased so rapidly, that there must be a large investment of capital, and extension of works to meet even the home demand, to say nothing of exportation; while, at the same time, the French minister of marine has recommended the repeal of duty on iron, both wrought and pig, shipped to the dock yards in France, for ship building, as they cannot supply it in quantities to enable them to compete in that line of ship-building with the English.—*Am. R. Jour.*

SPLITTING WOOD.—Every man who splits up stove wood knows that, by the usual way, he has to spend two-thirds of his time in setting up the block ready for the blow of the axe. To save this time, we have adopted the following way, and found it to save at least two-thirds of the time, equal to at least several dollars a year to every man who has to keep one stove going. A large flat block of wood, six or eight inches thick, and nearly two feet wide, has a large hole cut through the middle about eight or nine inches square. The block of stove wood is set on one end in this hole, and quick and repeated strokes of the axe split it up finely, without once touching it with the hand. If such a block is not easily to be had, take two crooked logs and pin them together.—*Albany Cultivator.*

AN IMPORTANT INVENTION.—Brown's Hotel, at Washington, is now brilliantly lighted with gas, furnished by an apparatus invented by Benjamin F. Coston, Esq., of the U. S. Navy. It is said to be constructed on the most economical plan, generating gas sufficient for one hundred burners at an expense of from 75 cents to $1 per night. The apparatus was manufactured by Messrs. Forsyth and Brothers, of Philadelphia, and consists of a small stove-like furnace, about four feet high and two feet wide, with a kettle in which rosin or grease is put. Gas is made in it at the rate of 400 feet per hour, without any purification, and ready for immediate use.

A TRIPARTITE BRIDGE.—The people of Pittsburgh are talking of connecting Pittsburgh with both sides of the Ohio, by means of one magnificent wire suspension bridge. The plat of the ground on which the city is built is triangular. The confluence of the two rivers at the "Point" forms the Ohio. Two wide streets border on each river, and also meet at the Point. From these the bridge starts, and in two spans one of 300 and the other 600 feet, extends down the Ohio 900 feet. Here, on a bar which exists, a pier is to be built, from which the bridge diverges—one stem reaching across to the Monongahela side, in one splendid span 750 feet in lenght, and 80 feet above low water mark; the other across to the Alleghany side, in two spans of 600 and 300 feet each in length, and 55 above low water mark. Whole length 2550 feet, in five spans, of 500 feet each, on an average. The engineer is Mr John A. Roebling, who has sketched out the plan.

NOVEL EFFECTS OF REFLECTION.—A gentleman had for some years been possessed of two brown cranes, (*Ardja pavonia,*) one of which at length died, and the survivor became disconsolate. He was apparently following his companion, when his master introduced a large glass into the aviary. The bird no sooner beheld his reflected image, than he fancied she for whom he moaned had returned to him, he placed himself close to the mirror, plumed his feathers, and showed every sign of happiness. The scheme answered completely, the crane recovered his health and spirits, passed almost all his time before the looking-glass, and lived many years after, at length dying from an accidental injury.

UNREMITTING KINDNESS.—A comedian went to America, and remained there two years, leaving his wife dependant on her relatives. Mrs F——tt, expatiating in the green-room on the cruelty of such conduct, the comedian found a warm advocate in a well-known dramatist. "I have heard," says the latter "that he is the kindest of men; and I know he writes to his wife every packet." "Yes, he writes," replied Mrs. F., "a parcel of flummery about the agony of absence, but he has never remitted her a shilling. Do you call that kindness?" "Decidedly," replied the author, "*unremitting* kindness."

PATENT LAWS.

(Continued from No. 27.)

SEC. 14. And be it further enacted, That all moneys paid into the Treasury of the United States for patents and for fees for copies furnished by the Superintendent of the Patent Office prior to the passage of the act of which this is additional shall be carried to the credit of the patent fund created by said act; and the moneys constituting said fund shall be, and the same are hereby, appropriated for the payment of the salaries of the officers and clerks provided by said act, and all other expenses of the Patent Office, including all the expenditures provided for by this act; and also, for such other purposes as are or may be hereafter specially provided for by law. And the Commissioner is hereby authorized to draw upon said fund, from time to time, for such sums as shall be necessary to carry into effect the provisions of this act, governed, however, by the several limitations herein contained. And it shall be his duty to lay before Congress, in the month of January, annually, a detailed statement of the expenditures and payments by him made from said fund. And it shall also be his duty to lay before Congress, in the month of January, annually, a list of all patents which shall have been granted during the preceding year, designating, under proper heads, the subjects of such patents, and furnishing an alphabetical list of the patentees, with their places of residence; he shall also furnish a list of all patents which shall have become public properiy during the same period; together with such other information of the state and condition of the Patent office, as may be useful to Congress or to the public.

Approved, March 3, 1837.

A Bill in addition to an "Act to promote the progress of the Useful Arts."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be appointed, in manner provided in the second section of the act to which this is additional, two assistant examiners, each to receive an annual salary of twelve hundred and fifty dollars.

SEC. 2. And be it further enacted, That the Commissioner be authorized to employ temporary clerks to do any necessary transcribing, whenever the current business of the office requires it: *Provided, however*, That, instead of salary, a compensation shall be allowed, at a rate not greater than is charged for copies now furnished by the office.

SEC. 3. And be it further enacted, That the Commissioner is hereby authorized to publish a classified and alphabetical list of all patents granted by the Patent Office previous to said publication, and retain one hundred copies for the Patent Office, and nine hundred copies to be deposited in the library of Congress, for such distribution as may be hereafter directed; and that one thousand dollars, if necessary, be appropriated out of the patent fund, to defray the expense of the same.

SEC. 4. And be it further enacted, That the sum of three thousand six hundred and fifty-nine dollars and twenty-two cents be, and is hereby, appropriated from the patent fund, to pay for the use and occupation of rooms in the City Hall by the Patent Office.

SEC. 5. And be it further enacted, That the sum of one thousand dollars be appropriated from the patent fund, to be expended under the direction of the Commissioner, for the purchase of necessary books for the library of the Patent Office.

SEC. 6. And be it further enacted, That no person shall be debarred from receiving a patent for any invention or discovery, as provided in the act approved on the fourth day of July, one thousand eight hundred and thirty-six, to which this is additional, by reason of the same having been patented in a foreign country more than six months prior to his application: *Provided*, That the same shall not have been introduced into public and common use in the United States prior to the application for such patent: *And provided, also*, That in all cases, every such patent shall be limited to the term of fourteen years from the date or publication of such foreign letters patent.

SEC. 7. And be it further enacted, That every person or corporation who has, or shall have, purchased or constructed any newly invented machine, manufacture, or composition of matter, prior to the application by the inventor or discoverer for a patent, shall be held to possess the right to use, and vend to others to be used, the specific machine, manufacture, or composition of matter so made or purchased, without liability therefor to the inventor, or any other person interested in such invention; and no patent shall be held to be invalid by reason of such purchase, sale, or use, prior to the application for a patent as aforesaid, except on proof of abandonment of such invention to the public, or that such purchase, sale, or prior use has been for more than two years prior to such application for a patent.

(To be continued)

"TALK ENGLISH, DOCTOR."—A Weardale doctor was lately summoned to a cottage at Harwood-in-Teesdale, near Darlington, and found a boy-patient in need of his services.

"Put out your tongue," said the doctor. The lad stared like a "gawvison."

"My good boy," repeated the medical man, let me see your tongue."

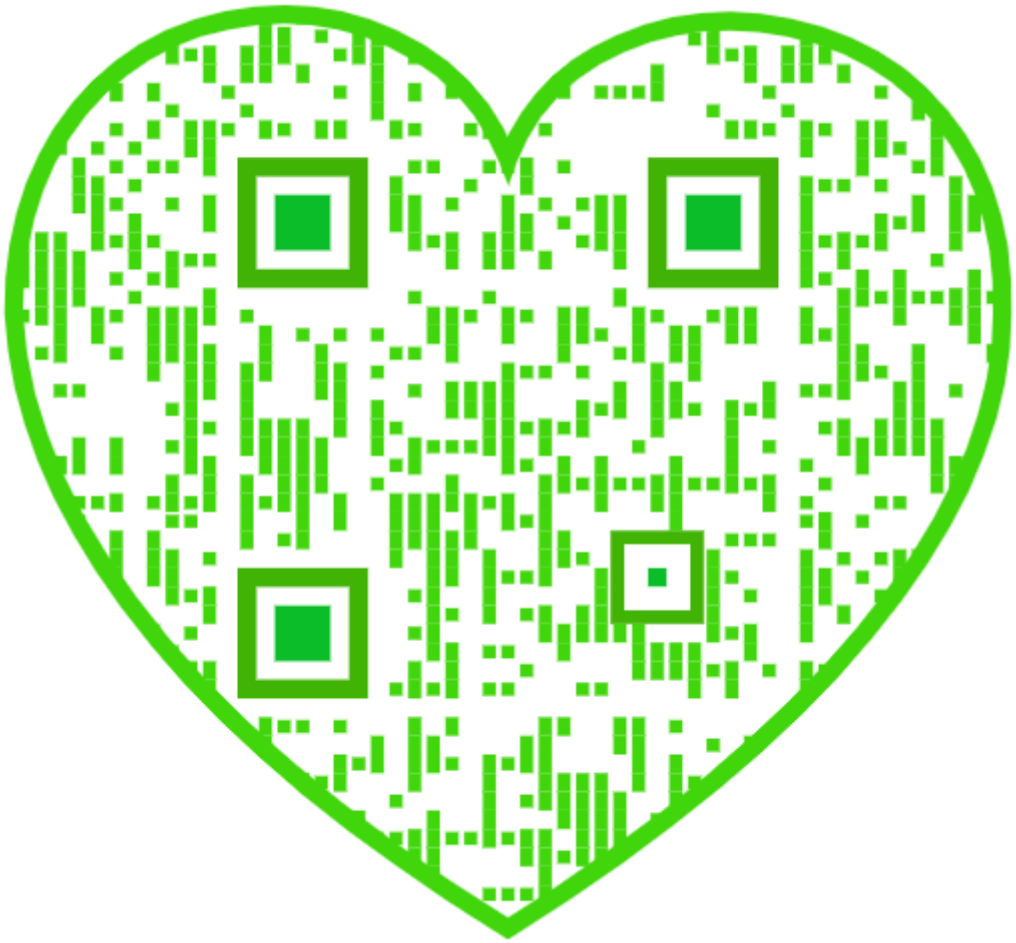
"Talk English, doctor," said the mother; then turning to her son she cried—

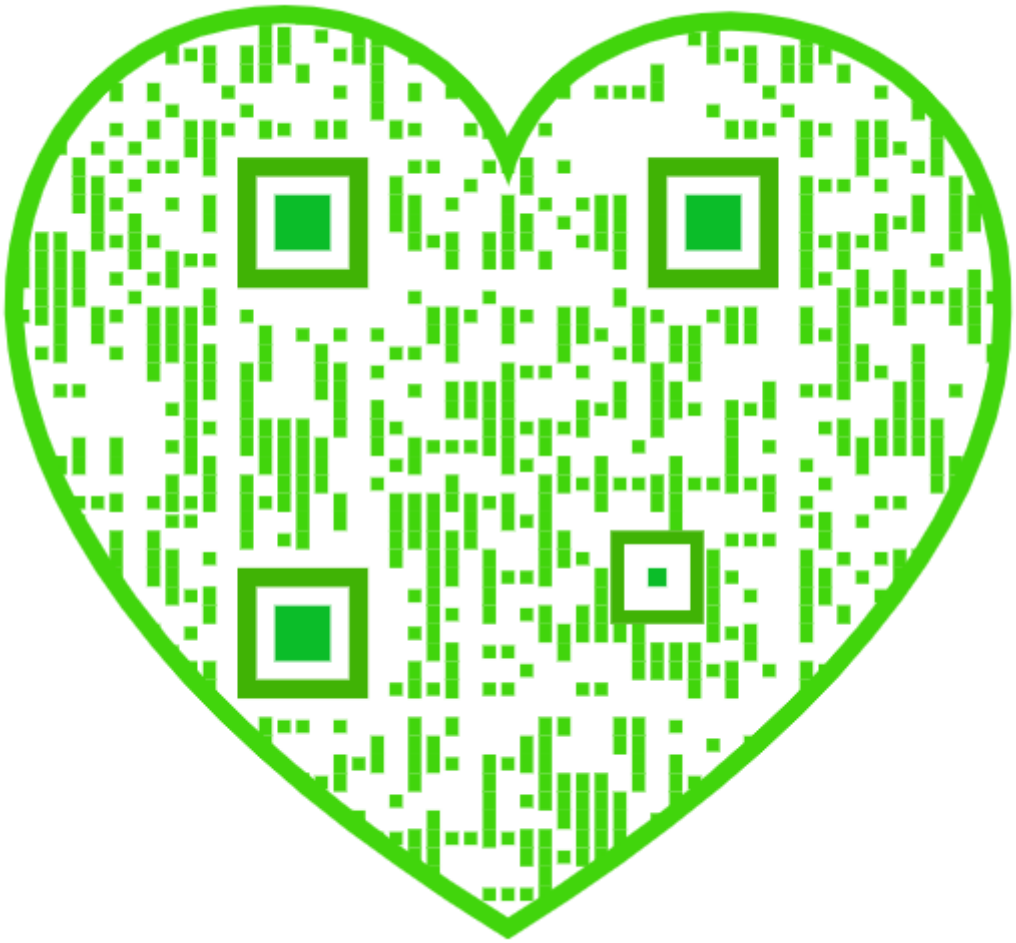
"Hoppen thy godlet, and push out thy lollicker."

The lad lolled out his tongue in a moment.

THE THOUSANDS OF ISREAL.—According to the Faithlul Watchman of Zion—the organ of orthodox German Jews—there were in Italy 50,000 Israelites; in Holland and Belgium, 80,000; in England 30,000; in Denmark and Sweden, 5,000; in Russia, 60,000; in Poland, 1,500,000; in Hungary, 160,000; in European Turkey, 300,000; and in other parts of Europe 1,000,000.

© 1846 SCIENTIFIC AMERICAN, INC.





SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, MARCH 26.

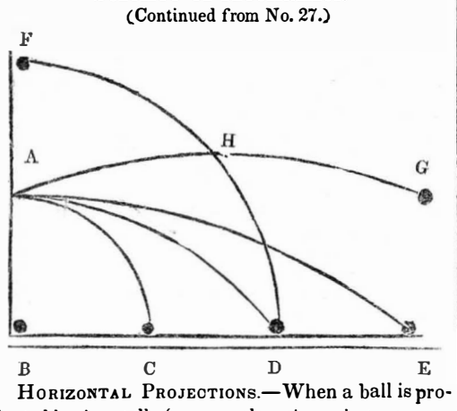
POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics.

MISSING NUMBERS.—It is unavoidable that our papers should sometimes fail of reaching their destination, although they are carefully directed and mailed. We are always ready to supply missing numbers when required.

Drawings of machinery, engraving on wood, and litho graphic drawings, neatly executed, at the lowest prices, at this office.

Science of Mechanics.

(Continued from No. 27.)



HORIZONTAL PROJECTIONS.—When a ball is projected horizontally from an elevation, whatever may be its velocity, or the force by which it is projected, it will reach any given point in its course, in the same time that a ball falling perpendicularly would reach a line horizontal to the said point. If a ball is let fall vertically from A to B, and another is projected at the same time horizontally with sufficient force to carry it to C, another to D, and another E, they will all have reached the ground at the same instant. If the distance from A to B is sixteen feet, each ball will have reached the ground in one second of time. The horizontal impulse does not in any measure prevent the action of gravity. The force required to project the first ball to C, is equal to raising the ball 4 feet perpendicularly. If the ball weighs 1 lb. a force of 8 lbs, applied for the space of 6 inches would be required, which is equal to 1 lb. 4 feet. As a reason for this we would remark, that the ball in its progress will have moved 16 feet horizontolly in one second of time, which is the velocity which is acquired by a ball in falling 4 feet. The second ball extends to D, a horizontal distance of 32 feet in one second, which must require double the velocity of the first ball projected; and as a double velocity requires a quadruple power, it is plain that the projective force must be equal to raising 1 lb. 16 feet; or, 16 lb. 1 foot, or 32lb. 6 inches. The third ball which extends to E will also require a projective force equal to raising 1 lb. a vertical distance equal to that which would be required in falling, to acquire a velocity of 48 feet per second, which would be 36 feet. If a ball is projected from F, with a force sufficient to carry it to D, it will have arrived at H in one second, at D in 1 1-4 seconds. The force required to project it, is equal to raising 1 lb. 32 feet, or 64 lbs. six inches. If a ball is projected at an inclination of one inch to a foot, and with sufficient force to throw it to G, the ball must perform the distance—48 feet—in the same time that would be required to fall 48 inches, which is half a second: the velocity of the ball must be equal to 96 feet per second, to produce which, a force would be required equal to raising 1 lb. 144 feet; or 288 lbs. applied to the space of 6 inches. From the forogoing statements and illustration, the reader will understand the principles of practical gunnery, and will see the practicability of calculating with tolerable certainty, to what distance, vertical or horizontal, a specified force applied for a specified time or distance, to a ball or projectile of a specified weight may be thrown; or, on the other hand, what quantity of force, applied for a given distance, or of power applied for a given time, would be requisite to project a ball or arrow, of a given weight to any required distance. It may be considered an average exertion of force of a charge of gunpowder, to project a one ounce ball, one mile: it may, therefore, by the foregoing rules, be estimated, what number of such balls, per minute, might be project ed with the velocity of an ordinary musket ball, by the application of one horse power, or by the power of one man, applied to the bending of springs, turning a projecting wheel, or the compression of atmospheric air.

To be continued.

AN ERROR.—The report mentioned in our last number that the Pennsylvania Legislature had passed the bill in favor of the Baltimore and Ohio Railroad, was not correct. A test vote has since been taken in the House of Representatives, and decided, by a majority of two, adversely to the Bill.

THE PRINCIPLE OF WAR.—On the subject of the prospect of a war with England, an exchange remarks, that it could not be more shameful for two honorable gentlemen to fight in the street, for the possession of a yard of ribbon, than for two powerful christian nations to go to war for the possession of a thousand miles of territory.

RAPID FLIGHT.—A pigeon which was daspatched from Southampton, Eng. at ten o'clock in the morning, a few weeks since, arrived at its home, in London, at 25 minutes past eleven: about 70 miles in 85 minutes. This is spoken of as extraordinary; but it will be recollected that in several instances, the locomotives on the best railroads have exceeded miles per minutes: yet a carrier-pigeon would probably think it a hard case to be actually passed by a train of cars while on the wing.

Illustrations of Chemistry.

(Continued from No. 26.)

EARTHS.—The Earth's chemical classification of bodies and substances, are frequently broken up and changed, in consequence of new discoveries in the progress of science. Many articles which were formerly supposed to be simple substances, and classed under the heads of earths, and alkalies, are now known to be metallic oxides: and on this account, some consider it reasonable to suppose all the different earths, to have metalic bases, although some of them have never yet been reduced to a pure metallic state. The substances which are now generally known as earths, are Lime, Alumine, Silex, Magnesia, Barites, Strontites, Ittria, Glucine, and Zircon. Most of the earths possess some peculiar properties, by which each is completely distinguished from another.

LIME, is usually found combined with carbonic acid, in marble and limestone. By burning, or heating these, the carbonic acid is driven off, and the lime is rendered pure. Pure lime is capable of absorbing one-fourth of its weight of water, and yet remain perfectly dry: thus becoming a hydrate of lime.

ALUMINE, or pure clay, derives its name from alum, which is a sulphate of alumine. Common clays consist of alumine mixed with some other earths, and generally contain a small quantity of iron, which gives it a red color when burned, as in bricks and pottery.

SILEX, is pure flint, or rock crystal: it abounds in white beach sand, and is the principal ingredient in the composition of glass. It resists the action of all acids, except the fluoric.

MAGNESIA, is a pure white earth,—has a great affinity for acids, and constitutes the basis of the common Epsom salts, which is a sulphate of magnesia.

BARITES, is the heaviest of all earths, and very poisonous. It is soluble in water, but is precipitated by sulphuric acid.

STRONTITES, is generally known as Strontia, and has the peculiar property of producing a bright red, or carmine-colored flame. Of the other earths, but little is known of their peculiarity, or utility, at present.

EXPERIMENTS.—To three ounces of pure lime, (quick lime) in a glass tumbler, add one ounce of water, in a dark room. The lime will absorb the water, and will emit a strong phosphorescent light during the process: after which it will appear as dry as before, although it will be found to have increased in weight, as well as in bulk, by the operation.

Procure a little of the muriate of strontia, or dissolve carbonate of strontia in muriatic acid, and pour over it a small quantity of alcohol; set it on fire and a beautiful carmine colored flame will be produced. A similar effect will be produced, by placing a little dry muriate of strontia, on the wick of a burning candle.

Put a little magnesia into a tea-cup, and suddenly pour over it as much sulphuric acid as will cover the magnesia: a chemical action between the acid and the earth will take place with so much violence, as to produce flame.

Dissolve alum in water, in a glass tumbler. Suspend by a thread, a lump of magnesia within the solution, and the acid will take to the magnesia, while the alumine, or clay, will be preciptated to the bottom.

(To be continued.)

For the Scientific American.

Optical Works.

NORTH OXFORD, March 20, 1846.

Dear Sir:—Will you permit me to reply, through your columns, to a number of letters received from scientific persons, and others, relative to some late experiments I have been making in the taking of the Moon's surface on a plate, similar to the Daguerrean process. My time is so occupied that it is impossible for me to answer by written letters the different gentlemen who have honored me with their requests.

My attention was first drawn to the subject by some remarks of an officer connected with the National Observatory, at Washington, relative to some experiments that had been made at Rome, for the purpose of obtaining daguerreotype charts of the heavenly bodies; and the subsequent idea of another gentleman: that if a plate of the Moon's features could be obtained, it might be subjected to reflective microscopic action, and its prominent features brought out on a screen. The first difficulty to overcome was the Moon's motion, and this was accomplished by mounting the camera similar to an equatorial refractor, and giving the required motion by means of clock-work. The plate being placed in the focus of the object-glass, and occupying the position of the field-glass in the eye-piece of a telescope. The next step was to ascertain the time required for the Moon's light to make an impression on a sensitive plate, and it was ascertained to be from 25 to 30 minutes, according to the state of the atmosphere. In the case of the plate obtained, the time was 28 minutes.

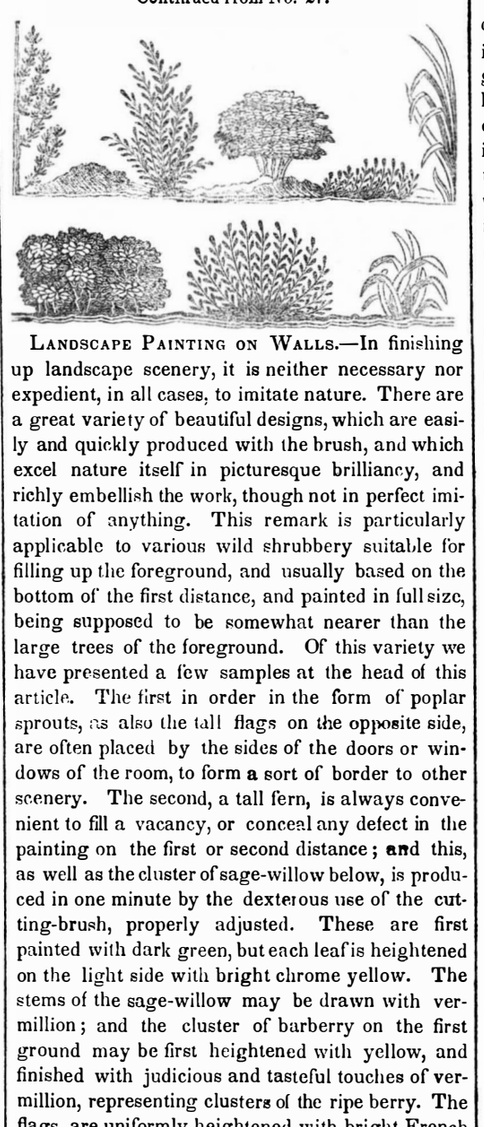
In order to obtain a plate sufficiently large to distinguish features under a power of 400 and have sufficient light, when reflected on the screen, it was found necessary to use a camera, the focal length of which was 22 feet. I illuminate the plate with the gasses burning on lime in the foci of a parabola reflector and a condensing lens, and obtained on the screen a well delineated map of the Moon's surface, 12 feet in diameter. Should any of the gentlemen who have taken an interest in the experiment, wish to pursue the subject further, I should be happy to further their views by any means under my control. Yours &c.,

HENRY M. PAINE.

REMARKABLE COINCIDENCE.—The two prominent candidates for Governor of Rhode Island, Dr. Ariel Ballou and Hon. Edward Harris, and who were nominated without regard, and probably without any knowledge of their particular residence, chance to be occupants of the same house, at Woonsocket Falls.

The Art of Painting

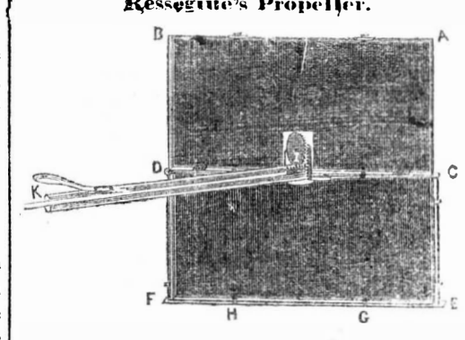
Continued from No. 27.



LANDSCAPE PAINTING ON WALLS.—In finishing up landscape scenery, it is neither necessary nor expedient, in all cases, to imitate nature. There are a great variety of beautiful designs, which are easily and quickly produced with the brush, and which excel nature itself in picturesque brilliancy, and richly embellish the work, though not in perfect imitation of anything. This remark is particularly applicable to various wild shrubbery suitable for filling up the foreground, and usually based on the bottom of the first distance, and painted in full size, being supposed to be somewhat nearer than the large trees of the foreground. Of this variety we have presented a few samples at the head of this article. The first in order in the form of poplar sprouts, as also the tall flags on the opposite side, are often placed by the sides of the doors or windows of the room, to form a sort of border to other scenery. The second, a tall fern, is always convenient to fill a vacancy, or conceal any defect in the painting on the first or second distance; and this, as well as the cluster of sage-willow below, is produced in one minute by the dexterous use of the cutting-brush, properly adjusted. These are first painted with dark green, but each leaf is heightened on the light side with bright chrome yellow. The stems of the sage-willow may be drawn with vermillion; and the cluster of barberry on the first ground may be first heightened with yellow, and finished with judicious and tasteful touches of vermillion, representing clusters of the ripe berry. The flags are uniformly heightened with bright French green. The low oak shrubbery on the lower ground, is first formed with a large tree-brush, and fancifully heightened with venitian red, French green, and yellow ochre, interspersed. A variety of flowers, especially the wild sun-flower, lillies, lilacs, lupines, Chinese pinks, and snow-balls, may be expeditiously produced, by the cutting brush and without the use of the hair pencil. Rough ledges of rock, are also often applied to give variety to the first distance. Two dark horizontal stripes, about two inches apart, should be drawn round the room at the base of the scenery,—this is readily accomplished by means of a straight rod, or four-feet rule, and a cutting-brush,—and the space between these stripes and the floor should be painted plain with a dark stone color, the better to give a good effect to the scenery. We shall proceed to give a variety of outline designs, in our next, and probably bring this subject to a conclusion.

To be continued.

Ressegiue's Propeller.



EXPLANATION.—A square iron frame A B E F, four feet in diameter, has a horizontal bar, C D, across its centre, and the spaces, above and below the centre bar, are close by two iron plate floats or gates, each of which is attached to the frame by hinges, the one to the top of the frame, and the other to the centre-bar. Another iron frame, C D E F, extends round the lower section of the frame, and is so adjusted, and secured in its place by guides, as to be moved vertically up or down about one inch occasionally. Two pins, G and H, project upward from the bottom of this sliding frame, passing through the bottom of the first frame, and serve as checks to prevent the lower float from passing the bar: and two other corresponding pins, project from the top of the sliding frame, through the centre bar, and check the upper float from passing it. The extreme end of a horizontal piston rod, K, I, is attached to the centre of the float frame, and immediately above the junction of this rod with the centre bar, is mounted a small geer-wheel, I. A groove is made in the side of the piston rod, and within the groove is a sliding rod, the end of which contains a few rack-teeth, which take to the teeth of the geer-wheel; so that when the slide is moved horizontally the wheel is thereby turned on its axis. Another short rack extends upward from the upper bar of the sliding frame, and the teeth thereof also take to the geer-wheel; that when the sliding rod is moved horizontally, the sliding frame is made to move vertically. A small hand lever near K is connected to both the piston rod and the sliding rod by pivots; and by means of this lever, the sliding rod is moved, thereby occasionally elevating or depressing the four pins attached to the sliding frame, as above-mentioned. The piston rod is intended to pass through the stern of a vessel, below the surface of the water, and is to be moved horizontally forward and back, by steam power. As the floats will present their full faces to the water while moving in one direction, but will open so as to to allow the water to pass through the frame freely in the other direction, it will tend to propel the vessel forward, if the check pins are forward of the floats. But if it is required to back the vessel, the check pins are to be depressed till the floats swing forward, and then elevated, that they may check the floats from passing back. Four or more of these propellers are to be arranged astern of the vessel, the sliding rod levers, and all the driving machinery being inside. The inventor, Mr. Wm. F. Ressegiue, of Brooklyn, N.Y., intends to apply for a patent for the invention, as soon as it has been properly tested.

Arts and Trades.

TEMPERING CAST STEEL.—In a fromer number we described the process of annealing steel, or hardening it for files &c, but the management of cast steel generally requires a different process from any other kind. The best rule we have found for tempering cast steel for edge tools, is to heat it to a full red and immerse it gradually and vertically or end-wise, in a tub of lamp oil; brighten some parts of the surface with a file, and then hold it over a charcoal fire till it assumes a deep orange color. If a spring temper is required, the temper may be drawn till the steel assumes a deep blue. As the precise color of different tempers, are indefinable, however, the practitioner should devote a little time to experimenting on the subject, carefully observing the color at each trial, and then proving the temper by full trial of its quality. Cast-steel springs, properly tempered, will not lose their elasticity by use, though they should be kept bent, or in constant play, for years.

NEW PROCESS OF SILVERING GLASS.—A mixture s first made of one ounce of coarsely pulver ized nitrate of silver, half an ounce of spirits of hartshorn, and two ounces of water; which, after standing for 24 hours, is filtered, (the deposite upon the filter, which is silver, being preserved,) and an addition is made thereto of three ounces of spirit, (by preference, spirit of wine) at 60° above proof, or naptha: from twenty to thirty drops of oil of cassia are then added; and, after remaining for about six hours longer, the solution is ready for use. After the solution has been poured on the glass, from six to twelve drops of a mixture of oil of cloves and spirits of wine (in the proportion of one part, by measure, of oil of cloves to three of spirits of wine) are dropped into it, at different places; or the diluted oil of cloves may be mixed with the solution before it is poured upon the glass: the more oil of cloves used, the more rapid will be the deposition of the silver; it is better, however, that it should occupy about two hours. When the required deposite has been obtained, the solution is poured off; and as soon as the silver on the glass is perfectly dry, it is varnished with a composition formed by melting together equal quantities of bees' wax and tallow. The solution, after being poured off, is allowed to stand for three or four days, in a close vessel; as it still contains silver, and may be again employed after filtration, and the addition of a sufficient quantity of fresh ingredients to supply the place of those which have been used. By experiment, it has been ascertained that about eighteen grains of nitrate of silver are used for each square foot of glass; but the quantity of spirit varies somewhat, as its evaporation depends upon the temperature of the atmosphere and the duration of the process.

GERMAN SILVER.—This fashionable composition is made by melting copper and crude arsenic together. But as the ingredients vary in quality, the exact proportion of each can not be gtven, but must be ascertained by trial. The operator must be very careful to avoid the fumes that arise from the melted metal, and on this account it is best to melt and mix the ingredients in the open air, and when there is a breeze to drive off the fumes, while the operator stands on the windward side. A small quantity of borax is used as a flux to aid the fusion.

GUN MAKING.—The incomparable gun barrels which bear the name of stub-and-twist barrels, are made of old worn horse-shoe nails, welded together, drawn to the required size, and bored in a regular boring machine constructed for that purpose. So precious is this iron esteemed, that even the chips which are bored out of one barrel are worked over, welded, and used for other barrels. Ordinary musket barrels are made by drawing good iron into a plate of the required length, breadth, and thickness, turning up the edges and welding the two edges together. For this purpose a swedge trip-hammer and anvil are used, in the face of each of which is a groove of the proper size and form to give the barrel a round shape outside, while the interior contains a round rod upon which the iron is thus hammered. The barrel is afterward bored, and ground to the proper shape outside, on large grind-stones.

Galvanism.

(See first page.)

A ROGUE TRAP.—A thievish fellow lately entered the wash-house of a citizen of Cincinnati, through a window, for the purpose of plunder, and in groping about in the dark he stepped into a cistern, from which the curb had been removed for the purpose of repairs. Frightened by his sudden descent, and his courage being cooled down by the cold water into which he plunged so unexpectedly, he began to bawl lustily for help, The noise aroused the family, and some of the men proceeded with a light to the spot where they found the scamp vainly endeavoring to climb out of his unwelcome bath. The gentleman thinking the cold bath and terror therewith was a sufficient punishment, helped the fellow out, after enjoying a hearty laugh at his sad predicament, and sent him off.

A KNITTING FACTORY.—The Sherbrooke (C.E.) Gazette, speaks of an establishment in that town, in which carding, spinning, and knitting shirts, hosiery and shawls of various sizes and of superior quality, is performed by machinery. Some of the shawls are two yards square. This machinery turns out 36 doz. of shirts and drawers, 42 dozen pairs of stockings, and 6 dozen shawls per week. It is rather surprising that the enterprising Yankees should allow their Canada neighbors to go ahead of them in this branch of manufacture.

THE "FREDERICK MIRROR," published at Frederick, Md., is an intelligent and excellent paper; but we would remind its respected editor, that the articles in illustration of Chemistry (and those on other sciences) in this paper, are original, and as such, entitled to credit.

There are 258 saw mills in the county of Allegheny.

VARIETY

An advocate having lately gained a suit for a poor young lady, she remarked, "I have nothing to pay you with but my heart." "Hand it over to my clerk, if you please," he replied, "I wish for no fee for myself."

The Nashua (N. H.) "Oasis," lately advertized for a wagon-load of bull frogs to do the croaking for political editors. He must send to Florida for them, for the Northern frogs can only *peep peep in the deep* at present.

The Castlebar, (Ireland) Telegraph, states that government has purchased 1000 tons of American corn, to be landed at the different ports of Ireland. Such a precedent will lead to important results.

It is said that the Greek Patriarch, at Constantinople, derives an annual revenue of £500,000 from the donations of pilgrims to the Holy Sepulchre at Jerusalem.

Cleveland, O., and Milwaukie, Wis., contain upwards of ten thousand inhabitants each. It is gratifying to observe the rapid progress of settlement and business in the vicinity of the lakes.

A Pittsburgh paper states that the fire which occurred nearly twelve months ago, is not yet extinguished. An immense mass of coal, is still burning, and is likely to continue for some time to come.

The line of Magnetic Telegraph is complete and in operation between Boston and Springfield. The office at Springfield is in Goodhue's building near the railroad depot.

It is stated in an exchange paper, that of sixty-seven persons who have been engaged in the liquor business within fifteen years, in two of the streets of Cincinnati, forty-three have died—drunk.

The turpentine manufactories in Wilmington, N. C., are going an immense business, and are expected to produce 200 barrels daily, of spirits of turpentine, besides rosin and pitch, during the season.

The new constitution of Mississippi prohibits the introduction of slaves into that State, for any purpose whatever. The motives, in this prohibition, appear to be not fully understood at present.

The ship Gen. Jackson, at Bristol, R.I., was built at Calcutta, of teak wood, about 80 years ago, and is still in good condition. She is supposed to be the oldest vessel in the United States.

Clothes-pins, wooden combs, cut tacks and mouse traps, are said to be exported from this country to England in large quantities. Wooden pumpkin seeds are not mentioned in the catalogue.

In Boston, about $160,000 per annum is paid for the support of public schools. This is said to be equal to the Parliamentary grant in 1841 for the whole of England.

The Hon. John Wentworth, of Illinois, has removed several times, and is about to remove again, for the avowed purpose of keeping at least twenty miles distant from a doctor or a lawyer.

The widow of Capt. Gray, the discoverer of the Columbia river, is still living, and has petitioned Congress for a pension. We presume no member of that body will vote against it.

Navigation of the North River, and competition therein, have been commenced in earnest. Several boats carry passengers for a dollar, and some as low as fifty cents, to Albany.

An article is going the rounds under the caption of "Miseries of New York." We doubt whether it will ever become a very popular theme, or that any writer will do justice to the subject.

Soap-stone griddles are recommended by a Worcester, Mass., paper, as being less adhesive, and consequently superior to iron, for the purpose especially of cooking buckwheat cakes.

Under the head of "Life in Town," the Boston Mail often furnishes some curiously incongruous items. The first article under this head, in a late number of that paper, is a *suicide*.

No less than 623,000 young ladies are said to be now receiving education in *French Convents;*—tremendous engines in the hands of the Pope in extending his influence over the French nation.

There are four whitelead manufactories in Brooklyn, using a capital of nearly one million of dollars, and manufacturing annually upwards 210,996,000 lbs. of white-lead, litharge, red-lead, &c.

The Peytona, a new and favorite Mississippi steamer, has had two small engines adder to her machinery, to pump water into the boiler while the boat makes temporary stops.

Sir "Jamestjee Jeejeehoby," is the name of a popular Hindoo philanthropist, who has done more to promote education and public improvements than any other man in the realm of India.

A class in Phonography, at Providence, R.I., are said to be capable of reading anything that may be written in the Phonographic character, although four weeks ago, not one of them knew the alphabet.

The Eastport Sentinel says the Bay of Fundy was recently frozen to the depth of *sixty feet*, and probably would never have been broken up, had not the Kennebec ploughed her way through it.

A man named Thomas Twentymen lately hung himself in Truxton, in this State, and the circumstance has been reported in the Rochester papers under the caption of "*Twentymen hung.*"

In the little town of Somerville, Middlesex county, last year, 27,576,000 bricks were made, and about 13,000,000 in the adjoining town of Cambridge.

© 1846 SCIENTIFIC AMERICAN, INC.

The Clouds.

Ye clouds, reposing on the thin blue air,
How calm ye smile upon this world below,
Whose scene to you may seem divinely fair,
As ye to us while on your course ye go,
Moving majestic forward, swift or slow.
The hills and vales receive a darker hue,
Then in the sun more beautifully glow:
'Tis thus misfortune clouds our mortal view,
Till hope comes forth in light, and joy springs up anew!

How bright your pearly surfaces appear,
As in the sun's glad beams ye sail along,
All nature joins your onward march to cheer,
Enlivening by the gush and flow of song,
As 'twould awhile your hurrying stay prolong.
But ye are hast'ning on your trackless way,
To meet in other skies the assembling throng,
And pour your treasures where the soft winds play,
That breathe among the flowers, and catch the wild bird's lay.

Oft I have lov'd in musing mood to gaze,
Upon each changing, ever varying form,
Whether, when melting in the sun's last rays,
Or in the black'ning grandeur of the storm,
And felt a kindling impulse, high and warm,
Known but where beauty, gloom, or grandeur dwell,
When to the bosom rush, in mingled swarm
Those high emotions, words can rarely tell,
While glowing thoughts, on wings of rapture dwell.

The Wife to her Husband.

Linger not long! Home is not home without thee,
Its dearest tokens only make me mourn;
Oh! let its memory, like a chain about thee,
Gently compel and hasten thy return.
Linger not long!

Linger not long!—though many woo thy staying,
Bethink thee: can mirth of friends, though dear,
Compensate for the grief thy long delaying
Cost the heart that sighs to have thee here!
Linger not long!

Linger not long! How shall I watch thy coming,
As evening shadows stretch o'er moor and dell,
When the wild bee hath ceased her busy humming,
And silence hangs on all things like a spell.
Linger not long!

Yet I should grieve not, though the eye that seeth thee
Gazed through tears that make its splendor dull;
For oh! I sometimes fear, when thou art with me,
My cup of happiness is over full!
Linger not long!

Haste—haste thee home into thy mountain dwelling.
Haste as a bird into its peaceful nest;
Haste as a ship, when tempests wild are swelling,
Flies to its haven of securest rest.
Linger not long!

Humility.

The bird that sings on highest wing
Builds on the ground her lowly nest,
And she that doth most sweetly sing,
Sings in the shade when all things rest;
In lark and nightingale we see
What honor hath humility.

The saint that wears heaven's brightest crown,
In deepest adoration bends,
The weight of glory bends him down
The most when high his soul ascends;
Nearest the throne itself must be
The footstool of humility.

A LITTLE GIRL'S PRAYER FOR TRUTH.

O Father, bless a little child,
And in her early youth
Give her a spirit good and mild,
A soul to love the truth.

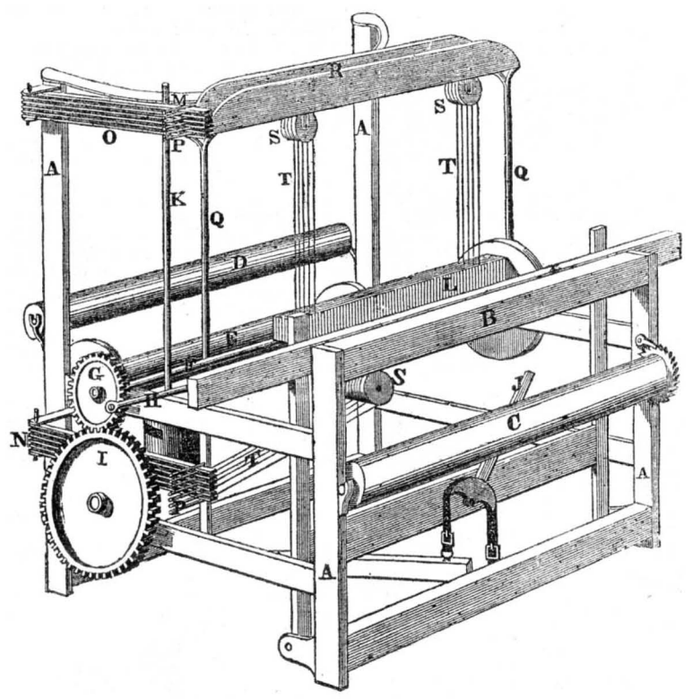
May never falsehood in her heart,
Nor in her words, abide;
But may she act the truthful part,
Whatever may betide.

SERMONS ARE LIKE GUNS.—Some are large, others are small; some are long others short; some are new, others old; some are bright, others rusty; some are made to be looked at, others to be used; some are loaded, others empty; some are owned, others borrowed. Some are air-guns, some pop-guns, some of every size, from the pocket pistol to the Paixhan gun. Some are charged only with powder, and make a great noise and smoke. Some send only small shot, that irritate rather than kill.—Some carry heavy metal, that does execution.—Some discharge chain shot, mowing down whole platoons, Some are wide-mouthed mortars, throwing only bomb-shells. Some are duelling pistols, used only in controversy;—vile things. Some go off half bent. Some flash in the pan. Some make a terrible fiz, the charge all escaping at the priming hole. Some shoot to high, some to low, some sideways, a few directly at the point. Some are aimed at nothing and hit it. Some scatter, prodigiously; some kick their owners over. Some are unerring; others always hit the wrong object.—Some have too much wadding and vice versa.—Some are alarm guns; others are complimentary guns, used only for salutes on speciul occasions.—Some are in a series, constituting a batterry; others are swivels, made to turn in any direction.—Some are useful, some useless, some dangerous.—Some amuse, some frighten, some exasperate, some gain the victory. Very much depends upon the manner in which they are made and managed.

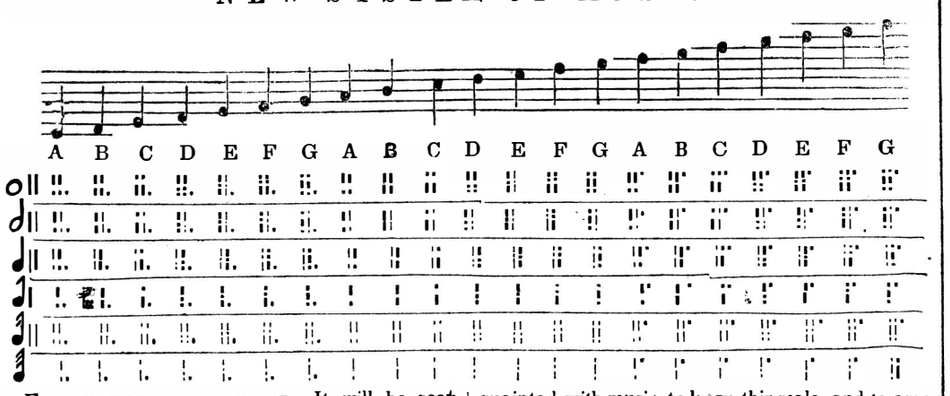
P'S AND Q'S.—"You must mind your p's and q's now, Miss Eliza;" said an elder sister to a girl. "Indeed," she replied, "I suppose, then, I must be *pert* and *quarrelsome?*" "No," was the rejoinder of a third; "you must be *polite* and *quiet.*"

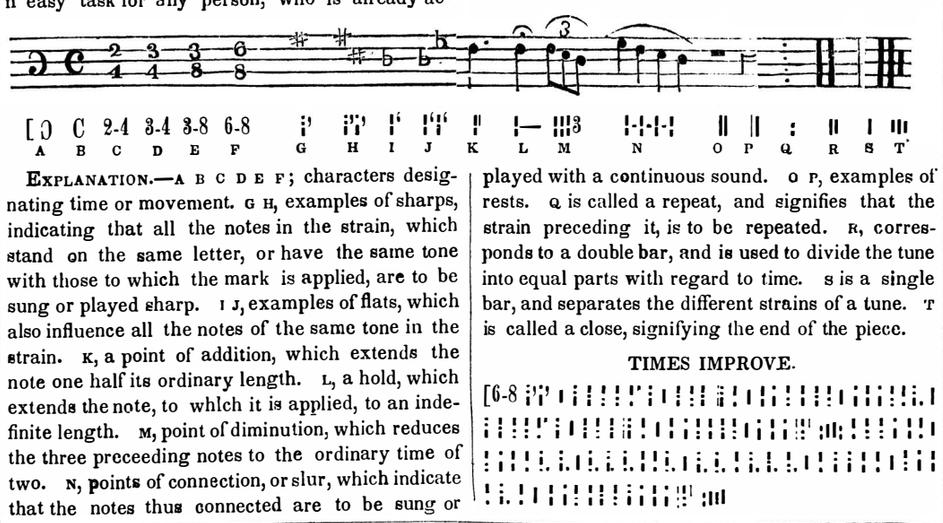
The Norway Advertiser puts it down as *very childish* for a lady to have three babies at a birth.

FAIRMAN'S SATINET LOOM.



This improvement was invented by Mr. E. Fairman, of Hartford, Ct. The improvement consists in the application of additional cam or cams to the horizontal treadles, and the application of an additional set of cords connected to the under extremities of the treadles or levers; which cords pass under a set of pulleys, and are then connected to the treadles underneath. A A A A are the four corner posts of the loom. B, the breast-beam; C, the cloth roller, with ratchet wheel and fall attached to one end to prevent its returning. D, the back whip roller; E yarn beam with its two heads. F, driving shaft, to the end of which is attached the driving wheel G; the lay-arm, H, is connected to the driving wheel or crank-wheel, and forms a connection between that and the lay. I, is the cam-shaft wheel, and J the picker staff. K is the cam-shaft: L, the headles: M, separate cams, by which the upper treadles are worked, one to each treadle. N, the lower treadles; and O the upper treadles:—each treadle having an iron shoe, on which the cams act above and below. P P bars to separate and support the ends of the treadles, and on which the treadles slide. Q Q, posts to support the treadle-rails, &c. R, treadle rails, between which the treadle pulleys are hung. S S S, the treadle pulleys. T T T, treadle cords. From each upper treadle, pass two cords, one over each of the top pulleys, and fastened to the treadles near each end. From each bottom treadle, one cord, passing under the lower pulley, and fastened to the centre of the bottom of the treadles. This invention is one of an extensive series, descriptions of which, with engravings—many of them on steel plate,—has been collected by Mr. Gilroy, and published in his invaluable work entitled "The Art of Weaving," published and for sale by George D. Baldwin, 35 Spruce st., New York.

NEW SYSTEM OF MUSIC.

EXPLANATION OF THE SCALE.—It will be seen that this scale embraces three octaves, which are designated in the scale by a dot on the right of the notes, at the bottom in the first, and at the top in the third octave. The first column of characters are the notes of the old system, and the second column are rests or silent notes, which, by their diversity of form, distinctly indicate the lengths of the corresponding notes which they represent. All the notes of the same class correspond in their form with the silent notes on the left; but are distinguished therefrom by horizontal cuts across them; and by the different positions and arrangements of these cuts, are indicated the corresponding letter and sound of he notes which they severally represent. It will be n easy task for any person, who is already acquainted with music, to learn this scale, and to associate in his mind, each character with the corresponding note in the common scale. He will observe and remember that from the first notes, A B C, of the ascending scale, each character has a single cut, the position of the cuts ascending in the three notes; each of the second three notes, D E F, have two cuts, their positions also ascending. The seventh note, G, is widely diverse from either of the others, and will be readily recognized as the 7th note of the octave. Other characters, commonly used in music, accompanied by the corresponding characters of the new system, and with letters of reference to the following explanations, are presented below.



EXPLANATION.—A B C D E F; characters designating time or movement. G H, examples of sharps, indicating that all the notes in the strain, which stand on the same letter, or have the same tone with those to which the mark is applied, are to be sung or played sharp. I J, examples of flats, which also influence all the notes of the same tone in the strain. K, a point of addition, which extends the note one half its ordinary length. L, a hold, which extends the note, to which it is applied, to an indefinite length. M, point of diminution, which reduces the three preceeding notes to the ordinary time of two. N, points of connection, or slur, which indicate that the notes thus connected are to be sung or played with a continuous sound. O P, examples of rests. Q is called a repeat, and signifies that the strain preceding it, is to be repeated. R, corresponds to a double bar, and is used to divide the tune into equal parts with regard to time. S is a single bar, and separates the different strains of a tune. T is called a close, signifying the end of the piece.

TIMES IMPROVE.

CURE FOR RHEUMATISM.—We have never felt a a sensible dread of the rheumatism, till we recently read in an exchange, a description of an approved remedy therefor, as practised by the writer of the article. The process is to repair to a river in the coldest mornings, cut a hole in the ice,—undress and jump into the water four feet deep—bathe and rub the body till the water freezes on the back and shoulders; and this is to be practised thirty mornings in succession. Verily, if the disease is worse than the remedy, we hope to escape it.

A DANGEROUS GIFT.—A person some time since presented a young lady, of Washington city, with a daguereotype likeness of himself. Subsequently it was discovered that he had raised various sums of money by forgery, and the lady immediately sent the picture to the officers of police, that they might the more readily discover the original.

FARNAM'S DESCRIPTIONS OF VARIOUS HYDRAULIC APPARATUS.—This work contains 80 large pages of representations of hydraulic machines, for raising water, and other purposes, and illustrated with forty handsome engravings, comprising many elegant patterns of fancy fountains, improved fire-engines, &c. We have a few copies of the work on hand, for sale at 38 cents each.

FAVORITE NAMES.—A lady of Troy has ascertained the number of counties, cities, and towns in the United States, which bear the names of our first six Presidents; viz., of Washington, 103; Adams, 21; Jefferson 59; Madison, 43; Munroe, 26, and of Jackson, 84. It should be recollected that in the frequent selection of these names, regard has been had to the name itself, as well as to the character of the illustrious persons who have rendered the names popular.

EARTHQUAKES.—It appears by recent accounts, that earthquakes were experienced at Smyrna and Calcutta at about the same time that the shocks were felt in Connecticut and Long Island, last October. Whatever natural circumstance may produce the phenomena of earthquakes, the immediate cause must evidently be central in the earth, thus to affect opposite sections of the surface at the same time.

OUR MUSIC.—We repeat the scale of music characters this week, and add a new and lively air; and shall publish most of the new and fashionable music that is introduced, arranged for the military bands, or the pianoforte, when our musical readers shall have had sufficient time to familiarize the new characters which we have adopted.

FALSE LIGHT.—We have heretofore had occasion to caution mechanics—young mechanics in particular—and would now repeat the caution, against erroneous, exploded, and superseded modes and directions for performing various arts, copied from ancient publications, and published by those who have no practical knowledge of them. The following, for instance, we copy verbatim from an exchange, and shall probably see it copied into other papers, as genuine, although the materials mentioned are not now known by the same names; and if they were used, they would produce no valuable effect.

"GRECIAN GILDING OF COPPER OR BRASS.—For this gilding, equal parts of sal ammoniac and corrosive sublimate are dissolved in spirit of nitre, and a solution of the gold made with this menstruum. Upon this the solution is somewhat concentrated; and the metal is put into it, or brushed over with it. The surface of the metal is rendered quite black by the liquor; but on being exposed to a red heat, it assumes the appearance of gilding."

RATHER HOT.—Advices have been recieved from the expedition of Capt. Stuart, in New-Holland. He left port Adelaide a year and a half ago, to proceed Northward, and had advanced about 500 miles to long. 143. 30 East, and lat. 29. 40 South. His description of the heat at the higest Northern point, is positively fearful. He says: I found the thermometer, which was fixed in the shade of a large tree, four feet from the ground, stationary at 130 degrees of Farienheit at half past 2 P.M. and in the direct rays of the sun it rose to 157 degrees. It had, on a former occasion, stood at 132 degrees in the shade, and 163 degrees in the sun!

THE GOLD PEN.—We have had in almost constant use, one of Bagley's diamond-pointed pens for more than two months, and believe it to be as sharp and perfect in every respect as when we commenced its use. In its elasticity and freedom of motion and effect, it is decidedly superior to any quill or steel pen we have ever seen; and is unquestionably cheaper in the long run than steel pens would be at 00 per gross. The price of them, in beautifully chased heavy silver cases, including an ever-pointed pencil, is $400. We are so well pleased with their incredible excellence and durability that we have made arrangements for furnishing them to all who may direct their orders to this office. They may be sent safely by mail, and the postage will not exceed the ordinary postage on a double letter.

ELECTRO-PLATING.—This art, which is one of the most useful as well as curious, that has ever been discovered, having been by most practitioners, too shammily executed to be serviceable, we have made arrangements to have work of this kind performed in connexion with this office, and under our immediate superintendence. The prices charged for plating watch-cases, in elegant and brilliant style of fashionable gold, for show merely, is fifty cents; for watch-cases, in a manner to be warranted to wear two years, $2,00. Pencil cases warranted to wear two years, 50 cents: do. for appearance only, 12 cents. Jewelry, and other articles in proportion. Brass, German silver, iron, steel, or britannia, permanently plated with silver, for two cents per square inch.

GRAHAM'S MAGAZINE, for April, is received. A more splendid mezzotint can not be imagined, than "the Parting," by Mr. Gross. The print of fashions is not surpassed by any thing of the kind in any work. Two pages of music, "The spell is broken," in addition to a choice variety of literary matter, render this number particularly attracting, and worth double the cost. It may be found at the Tribune Buildings, New York, at 98 Chesnut st., Philadelphia, and at No 11 Court st., Boston.

PITMAN'S PHONOGRAPHY.—Mr. H. J. Hudson is about to commence a morning course of lessons in Phonography at Wheeler's Writing Academy, (corner of Broadway and Chambers street,) which will accommodate compositors of the morning papers, and others whose engagements will not admit of evening attendance. A free introductory lesson will be given on Saturday next, at 12 M. The number of subscribers will be necessarily limited.

THE NEW ROUTE TO BOSTON.—We have before mentioned a project,—and it will ere long be carried through,—for the construction of a railroad on nearly a direct line between New York and Boston, passing through New Haven, Middletown, Willimantic, and Woonsocket. Much interest is excited on the subject, and it has been recently ascertained that the greatest variation from a direct line is only about seven miles.

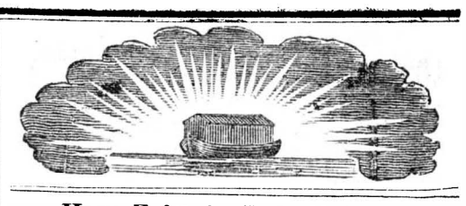
SEARS' NEW PICTORIAL and Illustrated Family Magazine, (No. 3 of Vol. 3,) is a rich number, and abounds with interesting engravings and descriptions. Published at 128 Nassau st. $2 per annum.

LOSS OF STEAMBOATS.—No less than twenty-five steamboats have been lost on the Mississippi and Ohio rivers, within the last six months. We are gratified to learn that Congress has recently appropriated $320,000 for the improvement of the Western rivers.

THE FAKIR OF AVA.—Mr. Rahab Marshall, the popular magician, usually known as the Fakir of Ava, died at Louisville on the 10th inst. He has left about $2,000 in gold, but was not so rich as some had supposed he might have been.

POPULATION OF EUROPEAN CITIES.—London contains about 2,000,000 of inhabitants, exclusive of strangers. The population of Paris exceeds 900,000; Vienna contains 330,000; Berlin 365,000, and St. Petersburg 476,000.

BE TEMPERATE IN ALL THINGS.—Pride, luxury, and idleness, were the sins of Sodom, and like sins will cause the punishments of individuals, even by natural laws; since the passions are excited by luxury so that reason and conscience are overcome, or in scriptural phrase, the carnal mind subdues the spiritual. Hence, fasting, and prayer to a kind God is also consistent with natural laws, since it weakens the passions and by sympathy elevates the pure affections.



Have Faith in God. Mark xi. 22.

The sacred Scriptures abound with commands, injunctions, and admonitions to men, to trust with full confidence in God, not only in his grace, but more especially in his providence. In every instance recorded, in which faithful men of old abandoned their self-dependence and trusted in God, they were not only supported, protected, or made successful, but were commended for their faith.—David was the first that we have account of, who, taking advantage of faith, ventured to put himself in an apparently perilous situation without any special command so to do. He early imbibed and cherished the idea, that if he trusted in the present power of God, under any circumstances, he would not be forsaken nor disappointed. Under this impression, he, single handed, encoundered the lion and the bear, and afterward the giant; and so far from being rebuked for his presumption, he, on this account, more than any other, was honored with the encomium of being a man after God's own heart. The disciples of our Lord were never censured for presuming too much on the divine providence, but often for their lack of confidence. A conspicuous part of the Sermon on the Mount, was on this subject, admonishing his hearers to abandon all anxious care about the things of this world, but set their hearts on, and make it their main object to obtain an inheritance in the heavenly kingdom. He reasons with them on the rational propriety of trusting in the providence of God, for such things as are needful in this world; and gives them positive assurance that if they devote their time and talents to gaining the favor of God, by doing good, and trust in him for such things as they need, they should not be disappointed. Some may entertain the erroneous opinion, that these promises of providence extend only to those who live holy lives; but no reservation of this kind is made in the promises: and it is a very fact which has continued a reality from the creation of man to the present time, that every human being who trusts in the Divine Author of creation and providence, resigning himself to the care and keeping of this kind Creator, *will be provided for and protected;* and will moreover be blessed with a great degree of happiness in the apprehension of the goodness of God, and in the consciousness of being thus kindly regarded by the glorious ever-present Divine Being. There are too many who trust, or affect to trust in divine grace to save them hereafter, and consequently, make little or no personal exertion, nor give themselves any anxiety on *that* subject, while they are far from placing the least confidence in the *providence* of God to provide for them, even in old age. In these affairs, they depend almost entirely on themselves, while they are quite willing to leave the future, all to divine mercy. But this is reversing the divine admonition, and such people will be proved hypocrites at last. But the truly honest believer will confidingly obey the command, "Seek first the kingdom of God," believing the promise that all needful things of this world will be provided.

A Pleasant Surprise.

A young man of eighteen or twenty, a student in a university, took a walk one day with a professor, who was commonly called the student's friend, such was his kindness to the young men whom it was office to instruct.

While they were now walking together, and the professor was seeking to lead the conversation to grave subjects, they saw a pair of old shoes lying in their path, which they supposed to belong to a poor man who was at work in a field close by, and who had nearly finished his day's work. The young student turned to the professor, saying: "Let us play the man a trick: we will hide his shoes, and conceal ourselves behind those bushes, and watch to see his perplexity when he cannot find them."

"My dear friend," answered the professor, "we must never amuse ourselves at the expense of the poor. But you are rich, and you may give yourself a much greater pleasure by means of this poor man. Put a dollar into each shoe, then we will hide ourselves."

The student did so, and then placed himself with the professor behind the bushes close by, through which they could easily watch the laborer, and see what a wonder of joy he might express. The poor man had soon finished his work, and came across the field to the path where he had left his coat and shoes. While he put on the coat he slipped one foot into one of the shoes; but feeling something hard he stooped down and found the dollar. Astonishment and wonder were seen upon his countenance; he gazed upon the dollar, turned it around, and looked again and again, then he looked around him on all sides, but could see no one. Now he put the money into his pocket and proceeded to put on the other shoe; but how great was his astonishment when he found the other dollar! His feelings overcame him; he fell upon his knees, looked up to heaven, and uttered aloud a fervent thanksgiving, in which he spoke of his wife, sick and helpless, and his children without bread, whom this timely bounty from some unknown hand would save from perishing. The young man stood there deeply affected, and tears filled his eyes.

"Now," said the professor, "are you not much better pleased than if you had played your intended trick?"

"O, dearest sir," answered the youth, "you have taught me a lesson now that I will never forget. I feel now the truth of the words which I never before understood—"it is better to give than to receive." We should never approach the poor but with the wish to do them good.—*Selected.*

Venerable St. Thomas's Church, corner of Houston st. and Broadway, is to undergo rejuvenation.

Post routes through Texas have been authorised by Congress.

© 1846 SCIENTIFIC AMERICAN, INC.

General Agents.

Colon &Adriance, 28, 29, 30, 31 Arcade, Philadelphia.
Hotchkiss & Co., 13 Court street, Boston.
R. K. Porter, New York City.

Local Agents.

Maine.—Shipley W. Ricker, South Berwick; C. D. Bearce, Portland.
New Hampshire.—J. A. Fay, Keene; Wm. O. Ruggles, Hanover; C. M. Smith, Manchester; J. Buffam, Nashua; D. L. Norris, Dover.
Vermont.—Thomas Boynton, Windsor.
Massachusetts.—J. W. Davis, Lowell; S. Thompson, Worcester; H. P. Barnes, Pittsfield; Benj. Perry, Salem; W. P. Seaver, Taunton; P.W. Tenny, Newburyport; Otis Cary, Foxboro; W. Robinson & Co., New Bedford; W. S. Barker, Medford.
Rhode Island.—Daniel Cobb, Providence; H. J. Pitman, Bristol.
Connecticut.—Peter Cook, Hartford; E. Downes, New Haven; William Woodward, Middletown; S. Jones, Colchester; J. Hunter, Thompsonville; H. S. Snow, Meriden; Safford & Parks, Norwich; O. P. Butler, Northfield.
New York.—T. Dickinson, Newark; T. S. Hawks, Buffalo; G. W. Hildreth, Lockport; William M. Beauchamp, Skaneatles; M. Nevin, 158 Fulton street, Brooklyn; M. S. Leonard, Oswego.
New Jersey.—J.L. Agens,No. 1 Commerce street, Newark; J. M. Francis, Hoboken; Alfred Walling, Keyport; Lees Garside, Corner of Main and Market sts, Paterson.
Maryland.—S. Sands, 122 Baltimore st., Baltimore.
District of Columbia.—W. H. Ward,Washington.
Georgia.—Chas. O'Neal, Darien.
Florida.—Major J. Nathans, Quiney.
Illinois.—G. W. Arnold, Peru.
Ohio.—Col. A. P. Chesley, Huron.
Wisconsin Territory.—Norris Hubbard, Southport.

Travelling Agents.

Clark Selleck. J. A. Lattin. Stephen J. Payne.

ILLUSTRATED BOTANY.

Edited by JOHN B. NEWMAN, M. D.

Circumstances make the man,and very often, as in the present case, the book. For years there has been a steadily increasing interest felt for the vegetable kingdom. Latterly this taste has been partially gratified by thelitera rymagazines, which owe their popularity, in a greatmeasure to the beautiful flower prints that adorn them. One specimen a month, however, is not enough, nor is it required in such connection. A work relating exclusively to the subject, is wanted by the public, and this want, the present enterprise is intended to supply.

Preceded by a short introduction on Physiology, and a view of the Natural and Linnæan Systems, the work will be devoted to a separate consideration of each plant.—Together with our own information, we shall draw on the standard works on Chemistry, Botany, and Medicine, combining every useful item of knowledge, and without lessening its value, present it in a concise and pleasing form. Obtaining our supplies from the same sources as the bee, we hope to *secrete* as elegant a sweet for the mind, as it does for the body. The properties of each, more especially the medicinal, will be confirmed, in a great number of instances, by personal experience. To this will be added its history; its meaning in the language of flowers; and poetry, either original or selected from the gems of the children of song.

The whole illustrated by splendid colored engravings, taken from nature. full size, and finished in the highest style of modern art.

This work is designed to be eminently popular in its application, and there is enough of that which is stronger than fiction about it, to render it, in no ordinary degree, interesting and instructive.

Terms.—This work will be published monthly, with four or six flowers, handsomely painted, in each number. Price three dollars a year, or two copies sent to one address for five dollars. A *very* liberal discount allowed to agents. J. K. WELLMAN,
Publisher and proprietor, 118 Nassau st.

*** Furnished to Seminaries, Colleges, and societies, in clubs, 10 copies for $20 a-year.

PARTICULAR NOTICE.

We do not intend to confine ourselves to the botanical descriptions of each plant, but on the contrary, divested of technicality, intend to make it a thoroughly scientific work, in all the departments of Botany. It will also give information on the cultivation of Plants and Flowers. In a word, it will comprise the whole science.

We give below the *free* opinions of the press.

From the N.Y. Tribune.

"ILLUSTRATED BOTANY."—This is a new candidate for popular favor, in the shape of a monthly periodical. The first two numbers are before us, and if they may be regarded as speeimens of those which are to follow, the work will certainly prove highly attractive. It is to be devoted to a separate consideration of each plant in the vegetable kingdom, the whole illustrated by colored engravings, taken from nature, full size, and finished in the highest style of modern art. Four or six of these engravings will be given in each number. Those in the numbers already issued are of the most beautiful and splendid description. The Editor will draw on the standard works on chemistry, botany, and medicine, and thus combine in a brief form every useful item of knowledge respecting plants and flowers, their medicinal qualities, &c. To this will be added their history and their meaning in the "language of flowers." To all lovers of the beautiful in Nature and Art, we commend this work as eminently worthy of patronage.

From the Christian Advocate and Journal, (Edited by T. E. Bond, M. D,)

The painted specimens are really exquisitely done; and the great marvel with us is, how the work can be afforded at the low price of three dollars per annum, or two copies to an address for five dollars. Engravings can be cheaply multiplied, but paintings must be executed separately, and without the aid of labor-saving machinery. It will give us real pleasure to announce the successive numbers of this beautiful periodical, as we have been led to think the study of Botany not only as an innocent recreation, but eminently promotive of piety.

From the N. Y. Surgical and Medical Reporter.

We have received the first number of "The Illustrated Botany." This periodical is got up in a very neat form, and displays taste and judgment in its Editor, who, being a well educated medical man, is prepared to make a work of this kind very interesting and useful to the general reader. The colored plates are unsurpassed in beauty and finish.

From the Protestant Churchman (N.Y.)

ILLUSTRATED BOTANY.—The design of this work is admirable. It is intended to comprise scientific descriptions of the most valuable native and exotic plants, with their history, medicinal properties, &c. &c.

N. B. Publishers of newspapers who give this prospectus three insertions, shall receive the work one year.
march 26.

LEE & CO.'S

WIRE WINDOW SHADES,
do. FIRE SCREENS,
do. GRATE do.
do. HALL AND OTAER DOORS, &c.

MANUFACTURED to order, in great perfection, of any size or shape, and elegantly painted with any Landscape, Lettering, or other devices or colors required.

These Shades, for which we received the highest premium at the two late Fairs of the American Institute, are unlike all others, in the following particulars:—

They admit all the air and Light into the room.
They admit a full view to the street from the room.
They obstruct the view from the street into the room.
They keep out all Mosquitos, Flies, and other insects.
They are very durable, being heavily coated with oil paint.
They are extremely ornamental.

By sending your address, (if in the city,) you will be called upon and every explanation given.

Offices, No. 577 Broadway, opposite Niblo's, and No. 18 Factory street, between Waverly Place and Amos street, N. Y.

*** Manufactured in Sheets for the Southern and Western markets.

Plumbe National Daguerrian Gallery,

AND PHOTOGRAPHIC DEPOT,
251 *Broadway, corner of Murray street, New York,*
(over Tenney's Jewelry store,)

Awarded the Medal, four first premiums and two "highest honors," at the exhibition at Boston, New York, and Philadelphia, respectively, the best pictures and apparatus ever exhibited.

Price of these superb photographs reduced to that of ordinary ones at other places, so that no one need now sit for an ordinary likeness on the score of economy,—taken in any weather.

Plumbe's premium and German Cameras, Instructions, plates, cases, &c. &c., forwarded to any desired point at lower rates than by ony other manufacturer.

Wanted—two or three skilful operators. Apply as above. jny29

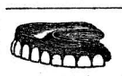
CUMMINGTON QUINEBAUG SCYTHE STONES.

From the celebrated Robbins' Ledge.

MANUFACTURED by J. S. STAFFORD & CO., Cummington, Mass.—The unprecedented sale of the Cummington Quinebaug Seythe-stones, during two years, has fully established their claim to superiority over all other stones now in use, and renders unnecessary any recommendation from the proprietors.

☞ A continuance of public patronage is respectfully solicited. All orders addressed to J. S. Safford, or Jacob Morse, (sole proprietors,) or Stephen Morse, Agent, Cummington, Mass., will meet with prompt attention.

For sale at all the principal hardware stores. nov9



TEETH.

THE cheapest office in this city for Dental operations is Dr. Brown's, 280 1-2 Broadway, between Reade and Chambers st.

Natural and mineral teeth inserted from $1 to 3 50
Decayed teeth filled with white cement,
and warranted useful for mastication, 50
Toothache cured effectually without pain, 50
Teeth extracted with less than half the usual pain 50

Dr. BROWN,
280 1-2 Broadway, 3 doors above Chambers, next to Stewart' & Co.'s new store.

References can be had from several hundred families, also to the medical faculty of the city. nov18

Valuable Books,

Just Published
By EDWARD ALKE R, 114 Fulton st.

Romanism vs. the Bible.

"It is our belief that ten thousand copies will be sold in less than six months."—Knickerbocker, Sep., 1845.

DOWLING'S HISTORY OF ROMANISM.

With 52 engravings, in various bindings.

In the short space of six months, this beautiful and popular work has reached its tenth edition—this is altogether unparalleled in the history of American book-making. Every American Protestant should furnish himself with a copy of this faithful history of Romanism.—Price $3.

IMPORTANT NATIONAL WORK.
THE STATESMAN'S MANUAL.

Just published, a new and enlarged edition of
Presidents' Messages,
in two handsome volumes, 8vo.;—the whole collected from official documents, by E. WILLIAMS, Esq.

CONTENTS:

1. The Addresses and Messages of the Presidents of the United States, from Washington to Polk; with a copious analytical Index to the same, of subjects, names and dates.
2. An account of the Inauguration of each President, and a brief notice of the principal political events of his administration.
3. A Biographical sketch of each President.
4. Declaration of Independence.
5. Articles of Confederation with a brief history of the events and circumstances which led to the union of the States, and the formation of the Constitution.
6. Constitution of the United States, with notes and references.
7. A synopsis of the Constitutions of the several states.
8. Chronological Tables of Historical events in the Uuited States.
9. Tables of Members of the Cabinets of the various administrations, Ministers to Foreign Countries, and other principal public officers.
10. Statistical tables of Commerce and population;
11. A Complete Index, or analytical table of contents to the whole work. Price $5.

COMPANION TO JOHN BUNYAN.

The fourth edition of Dr. Cheever's Lectures on Pilgrim's Progress, and the life and times of John Bunyan, illustrated with beautiful steel engravings.

WONDERS OF THE WORLD.

Just published, the *fourteenth edition* of this truly popular work,—price $2,50.

KNOWLEDGE IS POWER.

Just published, the *tenth* edition of the "People's Guide to Knowledge:"—price $2 50.

THE MISSIONARY MEMORIAL—Price $2.

Pictorial History of the Revolution,
with numerous plates, extra gilt,—price $2.

NEAT AND ELEGANT

Book-binding,

E. WALKER, 114 Fulton st.,

Respectfully informs his friends, and the public in general, that he has made extensive preparations for binding the "Harpers' Illuminated Bible," in beautiful and costly pictorial bindings.

Persons collecting six copies of this Bible, and forwarding them to the subscriber, with directions, will receive the binding of one copy gratis.

Wanted, in every town and village in the United States. responsible men to procure subscribers, and engage in the sale of the above works, to whom a very liberal per centage will be allowed.—address E. WALKER, 114 Fulton st.

*** Country newspapers, copying the whole of this advertisement, and giving it six inside insertions, shall be entitled to a copy of any one of the above works,—all who may comply with the above terms, will please send a copy of the paper, each time of insertion, to the publisher, E. WALKER, 114 Fulton st., New York.
Feb11tf.

A. G. Bagley's Celebrated Improved

EVER POINTED GOLD PEN.

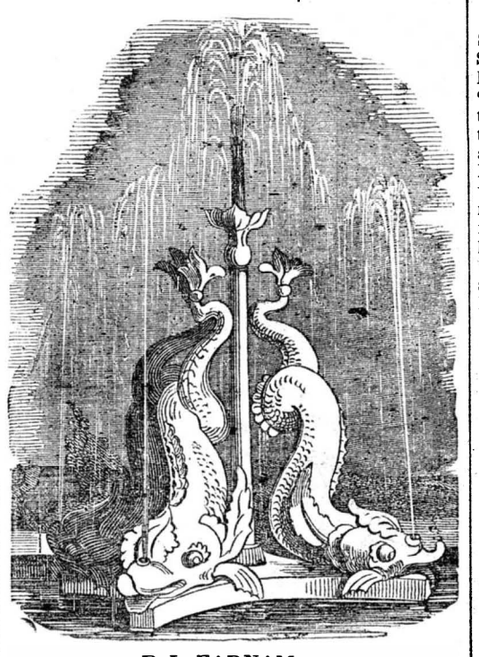
THIS Pen received the highest premium at the last Fair of the American Institute, and has been pronounced by the first teachers of Penmanship in the country to be infinitely superior to any Gold Pen ever before introduced to the American public. The lasting properties of this Pen are undoubted, owing to the total absence of corrosibility from any of the inks in use, and the peculiar shade of the nibs, (which was first introduced by Bagley, (makes it more pleasant to use, renders it less liable to damage, more easy to repair, and prevents the necessity of the great care that other articles of the kind require.

MANUFACTORY, 189 Broadway, N. Y. nov9.

Engraving on Wood.

THE subscriber is prepared to execute
WOOD ENGRAVINGS
of Machinery, Landscapes, Plans of every description for newspapers, book embellishments, &c. &c., in good style, and at short notice, at 89 Nassau street, in the
SUN BUILDINGS,
and adjoining the office of the Scientific American.
march 26. A. R. HAIGHT.

Farnam's Patent Hydraulics.



D. L. FARNAM,
(29 FULTON STREET, N. Y.)

MANUFACTURES Cast Iron Fountains in great variety, at prices from Five to Five Thousand Dollars;—also Lift and Force Pumps, calculated to raise from ten to six thousand gallons per minute, and fitted for every variety of purpose for which they can be required. Fire Engines, of superior powers; Leather Hose, Wind Mills, Water Wheels, Horse Powers, Lead Pipe, Air Pumps, Brass Work, &c. &c.

D. L. F. has pulished a work on the subject of Hydraulic apparatus, Fountains, &c., which contains much useful and practical information, and among others 18 cuts of Fountains, with their prices;—the book can be forwarded by mail to those requiring information on the above subjects. nov9

Patent Agency

DRAWINGS and specifications of machines, with other papers requisite for procuring Patents of New Inventions, will be furnished at short notice, at the office of the Scientific American. No charge will be made for advice or instructions on the subject of securing Patents.

Book for Mechanics.

THE ENGINEER'S AND MECHANIC'S COMPANION.

Comprising Weights, Measures, Mensuration of superfices and solids, tables of squares and cubes,—square and cube roots, circumference, and areas of circles, the mechanical powers, centres of gravity, gravitation of bodies; strength, weight, and crush of materials; waterwheels; hydrostatics, hydraulics, statics, centres of percussion and giration; friction, heat, tables of weight and metals; pipes, scantling, and interest; steam and the steam engine.

By J. M. SCRIBNER, A. M.

Recently published, and for sale by
HUNTINGTON & SAVAGE,
216 Pearl st., price $1,12 to $1,50.
jny1

PROSCH'S

Daguerreotype Rooms,

EXPRESS BUILDING, 112 BROADWAY,
Nearly opposite the City Hotel, New York.

Likenesses obtained at this establishment in superior style, and inclosed in a handsome Case for One Dollar—Fifty Cents additional if colored and sealed.

Every Portrait shall give satisfaction or no sale.

N. B. Instruction given in the art, and the most improved apparatus, &c., furnished on as favorable terms as elsewhere. GEO. W. PROSCH. feb4

FREE EXHIBITION,
Persons are invited to call and see their own

PORTRAITS,

IN DAGUERREOTYPE,
to purchase or not, at their pleasure, at
A. SEALEY'S
Daguerrean Room, Southeast corner of Broadway and Fulton street,
(Entrance 156 Fulton,) New York.

Plain Portraits, including morocco case, $1 00; colored do. $1 50. feb4

The Nautilus.

The most complete, improved and perfect
LIFE PRESERVER

that has ever yet been used or known, is manufactured and for sale at No. 90 Nassau street. This instrument is so constructed as to be condensed into a small compass, and may ever be carried in the pocket; but when required for use, it instantly inflates itself, and may be adjusted round the body and secured in one fourth of a minute, and will effectually secure the wearer against the possibility of drowning. The price of the article is $3,50. jan 22.

Rolling Mills, blast Furnaces & Forges,

Iron works of all descriptions, erected upon the most improved plans; steam or water powers.

Drawings, plans and estimates made for buildings, furnaces and machinery, and contracts for the whole or any part thereof taken and executed with promptness and despatch; and will also give his personal superintendence in the erection of iron works of all kinds, such as Rolling mills, blast furnaces—of hot and cold blasts—anthricite, bituminous, and charcoal or wood furnaces, forges, tripthammers; iron, brass, and bell foundry, pudling and heating furnaces, air cupolo chaffery and refinery, or let out furnaces.

N.B.—All letters directed, post-paid, to S. B. MERKEL, Founder-machinist, millwright, draughtsman and Engineer, Philadelphia. Pa. feb11.

JOHN BROWN.

CARPENTER AND PRINTER'S JOINER.

Nos. 29 & 61 *Ann-street, N. Y.*

MANUFACTURER of Cases, Stands, Furniture, &c. Stereotype Blocks, of various sizes.

Box-wood and mahogany, for Engravers, always on hand.

Stereotype plates blocked at short notice.

Press, paper, and letter boards, of every description.

Book-binders' cutting and pattern boards.

Stereotype boxes, made to order.

Printers', stereotypers, type-founders's, and bookbinders' jobbing work done at the shortest notice.

N. B. Orders from various sections of the country solicited, and promptly executed. nov9

GALVANIC APPARATUS.

DANIEL DAVIS, Jr., 428 Washington street, Boston, manufactures all the variety of philosophical apparatus, connected with Magnetism, Galvanism, Electro-magnetism, and Magneto Electricity. He has constantly on hand a variety of Electro-magnetic machines, permanent magnets, Galvanic Batteries, &c. For sale on the most liberal terms. nov18

GURNEY'S PREMIUM DAGUERRIAN Gallery, 180 Broadway, New York.—Pictures taken at the establishment are not excelled in this country—so say his numerous patrons. The public are respectfully invited to call and judge for themselves.

State Convention.

STATE OF NEW YORK, ss.—We, the Secretary of State, the Comptroller, and the Treasurer of the said State, having formed a Board of State Canvassers, and having, in conformity to the provisions of the act entitled "An act recommending a Convention of the People of the State," passed May 13, 1845, canvassed and estimated the whole number of votes or ballots given for and against the said proposed "Convention" at a General Election, held in the said State on the fourth day of November, in the year 1845, according to the certified statements of the said votes or ballots received by the Secretary of State in the manner directed by the said act, do hereby *determine*, *declare*, and *certify*, that the whole number of votes or ballots given under, and by virtue of the said act, was two hundred and forty-seven thousand, one hundred and seventeen; that of the said number, two hundred and thirteen thousand, two hundred and fifty-seven votes or ballots were given for the said Convention: That of the said first mentioned number, thirty-three thousand, eight hundred and sixty votes or ballots were given against the said Convention: And it appearing "by the said canvass that a majority of the votes or ballots given as aforesaid, are for a Convention," the said canvassers do farther *certify* and *declare*, that a Convention of the People of the said State will be called accordingly; and that an election for Delegatas to the said Convention will be held on the last Tuesday of April, in the year 1846, to meet in Convention at the Capitol in the City of Albany, on the first Monday in June, 1846, pursuant to the provisions of the aforesaid act of the Legislature.

Given under our hands, at the Secretary of State's Office, in the City of Albany, the twenty-sixth day of November in the year of our Lord one thousand eight hundred and forty-five.

N. S. BENTON, Secretary of State.
A. C. FLAGG, Comptroller.
BENJ. ENOS, Treasurer.

State of New York, Secretary's Office.—I certify the preceding to be a true copy of an original certificate of the Board of State Canvassers on file in this office.

Given under my hand and seal of office, at the City of Albany, the twenty-sixth day of November, in the year of our Lord one thousand eight hundred and forty-five.

N. S. BENTON. Secretary of State.

STATE OF NEW YORK, Secretary's Office,
Albany, January 28th, 1846.

To the Sheriff of the County of New York—*Sir*:—Notice is hereby given, that pursuant to the provisions of the act entitled "An act recommending a Convention of the People of this State, passed May 13, 1845, an election will be held on the last Tuesday of April next, in the several cities and counties of this State, to choose Delegates to the Convention to be held pursuant to the provisions of the aforesaid act and the certificate above recited.

The number of Delegates to be chosen in the County of New York will be the same as the number of Members of Assembly from the said county.

Respectfully yours,
N. S. BENTON, Secretary of State.

Sheriff's Office, New York, February 7, 1846.

The above is published pursuant to the notice of the Secretary of State, and the requirements of the statute in such case made and provided for. WM. JONES,
Sheriff of the City and County of New York.

☞ All the public newspapers in the county will publish the above once in each week until election, and then hand in their bills for advertising the same, so that they may be laid before the Board of Supervisors and passed for payment.

See Revised Statutes, vol. I, chap. vi, title 3d, article 3d—part 1st, page 140. march 18 t E.

F. J. Austin,

PRESS MAKER AND MACHINIST,
(Removed from 93 Gold st., to)
No. 31 Ann street, New York,

Where he continues to carry on the above business in all its various branches, and is prepared to receive orders for all the various kinds of presses, and other articles in his line, used in a Printing Office and Bindery, namely,

Improved patent-machine Printing Press; ditto Washington ditto; improved patent Self-inking Machine; improved Screw Standing-press; Lithographic press; Copperplate press; Card press; Copying and Seal press; Embossing press; improved Patent Book-binders' Cutting press; Cast and Wrought Iron Chases, Stereotype Blocks, etc. etc.

Jobbing of all kinds, done at the shortest notice.

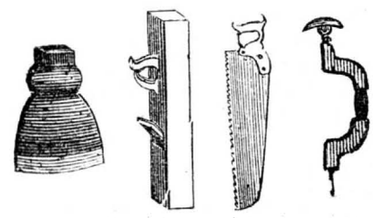
From long practical experience in the business, and personal attention thereto, he is confident of being able to give general satisfaction to all who may favor him with their custom, and to execute all orders with promptness.

Charges moderate. A reasonable discount made for cash. feb. 11.

The Best Ink Known,

Two Silver Medals Premium!

At the Annual Fair of the American and Mechanics' Institute for 1846, a SILVER MEDAL was awarded by each to Thaddeus Davids for "the Best writing Ink known." 500 gross 2, 4 6, 8, 16, and 32 oz. steel pen ink; 100 gross, ditto blue, red, japan, and copying ditto; 200 gross, Indelible Ink, warranted, with and without a preparation in elegant cases; 5000 lbs. wafers, all sizes and qualities from 10 to 50 lbs.; 10,000 lbs., sealing wax from 6cts. to $1, per lbs. For sale, wholesale and retail, on accommodating terms, by THADDEUS DAVIDS, Importer and manufacturer of sealing wax, wafers, inks, indelible inks, &c., No. 112 John street, New York, and by all stationers, booksellers, druggists, &c., in the United States. jny29



AT HENRY ROWNTREE'S old established *Tool Store*, at the Corner of Chambers and Chatham streets, Mechanics, Farmers, &c., will find an assortment of good Tools, suitable for almost every branch of trade.

H. R. feels obliged to his many customers, of every class, for their past patronage and hereby assures them that no pains shall be spared to procure the best articles in all variety.

H. R. has a greater part of his goods made expressly for him, and Mechanics, &c., may place confidence in them, having had the gold medal awarded him, at the late Fair, for the best tools.

First rate Razors; Pen and Pocket Knives; Table Knives and Forks, &c.

☞ Remember, at the corner of Chambers and Chatham streets. dec26

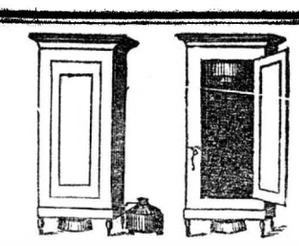
Levi Chapman.

No. 102 William Street, New York.
Manufacturer of the
CELEBRATED MAGIC RAZOR STROP
of four sides.
Also, Pocket Books, Wallets, &c.
On the most extensive scale.

L. C.'s facilities for manufacturing Pocket Books, or Wallets, for the supply of those wholesale dealers who buy to sell again by the gross or dozen, are unequalled, he having employed for the last ten years from 50 to 270 workmen. His present well regulated system of *division of labor*, enables him to supply these articles at a very great reduction, at least one third less than former prices.

Strops retailed at from 50 cents to $1,00 each, varying only in outward finish and size—warranted to please or the money returned. jan22.

JOHN. H. MILLER
Book, Job, and Music Printer.
No. 41 *Wall Street, in the rear,*
New York. nov18



Locke's Portable Shower Bath.

THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the id of servants, and withodt having a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st. JOHN LOCKE.
Dec 4.

ADAMS & Co.'S
GREAT EASTERN, SOUTHERN, AND WESTERN

Daily package Express.

ADAMS & CO. respectfully give notice that their arrangements for their various Expresses have been perfected with the greatest care, and enable them to forward, with the utmost security and rapidity, and at moderate rates, Merchandize of every description, viz.:—Boxes, Bundles, Packages, Specie, Bank Notes, samples valuable papers, &c. &c., to

Boston,	Hartford,
Worcester,	Springfield,
Norwich,	Philadelphia,
New London,	Baltimore,
New Haven,	Washington, D.C.
Fredericksburg, Va.	Wilmington, N. C.
Richmond.	Charleston,
Norfolk	Savannah,
Portsmouth,	Augusta, Ga.
Petersburg,	Cumberland,
Wheeling,	Pittsburg,
Cincinnati,	Louisville,
St. Louis,	

Our Agents in these several Cities pay particular attention to the collection and payment of Notes, Drafts, Bills, &c., and all other business appertaining to our Express.

In connexion with Messrs. Wilmer & Smith, of Liverpool, we have established an European Express, similar in its design and operation to our American Express, and alike beneficial to the Merchants and Importers of both countries. Custom House business promptly attended to.

Express for the South and West leaves the Office daily, at 1-4 to 3, and half past 4 P.M.

Express for the East at 1-4 to 5 P. M.

Merchants and others will bear in mind, we run the only Express Cars between New York and Baltimore.
feb4 nv9o5w ADAMS & CO., 16 Wall street,

JOHNSON'S

DINING SALOON,

No. 144 FULTON STREET.
(Near Broadway): New York.

BILL OF FARE.

Roast Turkey,	18d	Boiled Ham,	6d
" Goose,	18d	Pork and Beans,	6d
" Chicken,	18d	Veal Pie,	6d
" Duck,	18d	Beef Steak Pie,	6d
" Beef,	6d	Chicken Pie,	12d
" Pork,	6d	Mush and Milk,	6d
" Veal,	6d	Rice and Milk,	6d
" Lamb,	6d	Lamb Pot Pie,	6d
" Pig,	12d	Fried Fish,	6d
Boiled Chicken,	12d	Fried Clams,	6d
" Mutton,	6d	Ham and Eggs,	12d
" Corned Beef,	6d	Chicken Soup,	6d
" Pork,	6d	Beef Soup,	6d
" Fish,	6d	Coffee,	6d

Dessert.

Suet Pudding	6d	Mince Pie	6d
Indian Pudding,	6d	Apple Pie,	6d
Rice Pudding,	6d	Peach Pie,	6d
Plum Pudding,	6d	Plum Pie,	6d
Bread Pudding,	6d	Pumpkin Pie,	6d
Apple Dumplings,	6d	Custard Pie,	6d

Breakfast and Tea.

Beef Steak,	6d	Hot Corn Bread,	6d
Veal Pie,	6d	Indian Cakes,	6d
Mutton Chops,	6d	Boiled Eggs,	6d
Ham and Eggs,	12d	Fried Eggs,	6d
Fried Tripe,	6d	Toast,	6d
Fried Sausages,	6d	Hot Muffins,	6d
Fried Fish,	6d	Hot Rolls,	6d
Fried Clams,	6d	Tea,	3d
Fried Liver,	6d	Coffee,	3d

J. CHAPMAN'S

Gentlemen's Furnishing Store,

No. 354 *Pearl Street,*
One door from Franklin Square, New York.

Stocks, Cravats, ready made linen, hosiery, gloves; and a variety of other articles, of the best quality, constantl on hand, and for sale at the lowest prices. jny 29

W. N. SEYMOUR & Co.

IMPORTERS AND DEALERS,
AT THE
Old Established Hardware and Tool Store,
No. 4 *Chatham Square,*
(at the Foot of the Bowery, N.Y.)

HAVE the greatest assortment of Hardware for builders; Mechanics' tools of all descriptions.
Wm. Graves & Sons' warranted cast steel files & tools.
Worrall's warranted cast steel saws.
Hoe & Co.'s do. do. do.
Cabinet Trimmings. Tin and wooden ware.
House-keeping articles of great variety.
Agricultural tools. Patent Safety Fuse for blasting.
Sole Agents, for this city, for J. A. Fay's patent Mortising Machine.

THE INVISIBLE DOOR SPRING.

W. N. S. & Co. have taken the exclusive agency, for this city, of Ellis's Invisible Door Spring, which commands a ready preference over all others, and has made arrangements to have them put on and adjusted to the doors of those who may require them; Mr. Shaffer, 75 Warren st, is engaged to superintend this department, and will promptly attend to all orders in this line.
Dec. 25.

Lap-welded Boiler Flues.

PROSSER'S PATENT.

THESE Flues alone, are now used in their marine engine boilers, by the French and English governments, and also by companies and private individuals for marine, locomotive, and stationary boilers where rapid generation of steam, with economy of fuel, weight and stowage is an object of consideration.

They can be obtained only, of the Patentee, at No 6 Liberty street, New York. THOS. PROSSER,
Nov 19tf. Patentee.

ELEGANT DAGUERRIAN

Portraits,

Furnished in neat morocco cases for
ONE DOLLAR,
By H. E. INSLEY, 122 and 124 Broadway.

ALEX. MACDONALD: PRINTER.

© 1846 SCIENTIFIC AMERICAN, INC.